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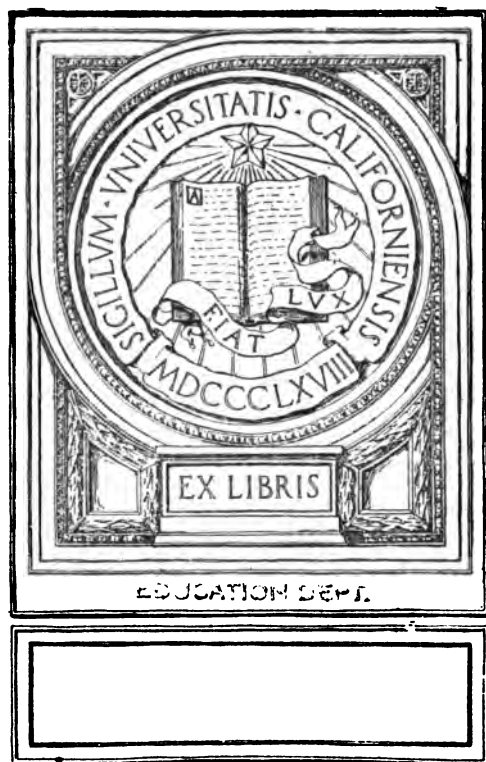
# OPEN AIR CRUSADERS

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UNIV. OF  
CALIFORNIA



A LESSON IN PATRIOTISM

# OPEN AIR CRUSADERS

A REPORT OF

## THE ELIZABETH McCORMICK OPEN AIR SCHOOL

TOGETHER WITH A

GENERAL ACCOUNT OF OPEN AIR SCHOOL WORK  
IN CHICAGO AND A CHAPTER ON  
SCHOOL VENTILATION

EDITED BY

SHERMAN C. KINGSLEY

GENERAL SUPERINTENDENT OF THE UNITED CHARITIES OF CHICAGO

*ILLUSTRATED*



Through the generosity of the Trustees of the Elizabeth McCormick Memorial Fund, the United Charities of Chicago is enabled to place this book before the public free of charge. Copies may be obtained by addressing the United Charities of Chicago, 51 La Salle St., Chicago, Ill.

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EDUCATION DEPT.

TO THE  
ADMINISTRATIVE

## **Dedication**

TO THE MEMORY OF ELIZABETH, DAUGHTER OF MR. AND MRS. CYRUS HALL MCCORMICK, A CHILD WHOSE RADIANT YOUNG LIFE WAS SO MARKED BY DEEDS OF KINDLINESS TO OTHERS THAT THESE MINISTRIES OF LOVE WERE NOT ALLOWED TO CEASE WHEN, AT THE AGE OF TWELVE, SHE WAS CALLED INTO THE PRESENCE OF THE GREAT FRIEND OF ALL THE CHILDREN.



## Preface

This little book concerns itself with the physical needs of school children. It is a story of the results obtained by giving a group of physically deficient pupils, most of them predisposed to tuberculosis, a year in an open air school; of their gain in health and mentality; of the part these little fresh air crusaders have already had in opening twenty thousand schoolhouse windows. The school was conducted by the United Charities of Chicago and the expense of maintenance, attendants and equipment was met through a grant to the Society by the Trustees of the Elizabeth McCormick Memorial Fund, a foundation in honor of the child to whose memory this book is dedicated. The Board of Education lent its generous and hearty co-operation by furnishing the school equipment, teacher, the supervision and whole conduct of the educational side of the work. Inquiries about the school have come from many different states, as well as from abroad, and have been so numerous that this somewhat detailed report is circulated in the hope that it may be of service to other communities where health needs and health rights of the children should be recognized and met. Above all it is hoped that this book will help in the movement to win their fresh air rights for all children. To make the book of the broadest possible service, to answer questions already asked and to anticipate others, we have included a chart giving a statement of the open air school movement up to date; a chapter on the open window school in Chicago by the principal of the Graham school; a chapter on the open air summer schools, taken largely from the 1909 report on Chicago's First Open Air School, issued by the Chicago Tuberculosis Institute, the large general agency which stands pre-eminently for the tuberculosis cause in Chicago; also a chapter on school ventilation which Dr. Evans, Health Commissioner of the City of Chicago, and his associates on the Chicago Ventilation Commission have kindly contributed.

Ventilating systems which do not ventilate have been revered too long. It is a serious matter when a school into which a child is forced actually contributes to his physical decline. The dull and backward pupil who cannot get his lesson is often kept in at recess or after school. He has sat for hours at a rigid desk, in an unnatural posture, in an over-heated room, the over-dried thirsty air sapping his already wilted system, the windows of the school never opened because the janitor, the ventilating engineer, and perhaps the teacher, who likes to have the thermometer 75 or more, say no.

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## Preface

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The Elizabeth McCormick Open Air School began its work in the pleasantest part of the year, when it was a delight to be out of doors, but in a short time very cold weather set in, the thermometer standing below zero on several different days. Every new movement at some time has its severe test and this open air school was no exception. Every precaution that could be taken was made in anticipation of the needs that would develop in this departure from the usual school regime. Yet complaints were brought to the superintendent of the city schools that the children on the roof were suffering on these extreme days. The medical staff, the medical director and those in charge were watching the children very closely and knew that in spite of the weather these little Eskimo clad people were cheerful and happy and comfortable. A meeting was planned which brought together the medical staff, the superintendent of schools, the supervisor and other people prominent in educational, philanthropic and medical professions. The day chosen for the meeting happened to be one of the most disagreeable days of the winter. A cold, freezing rain had been drizzling for twenty-four hours, the roof was slippery, the day was grey and dark and the air full of a profound chill. The electric lights in the study tent had been turned on. It was one of those discouraging days when it is difficult not to feel blue and when the teacher learns to anticipate poor lessons, listless pupils and an uncomfortable day. The visitors to the open air school found the discouragement of the day quite routed by the unaffected good spirits of the children. They heard wide-awake recitations, saw a group of alert and attentive children. They felt of the heavy blanket suits, examined the warm boots and noted the general comfort of the child. Spirited gymnastics were carried on under the shelter tent. The visitors looked over records, saw the increase in weight, the decrease in temperature and observed the general atmosphere of content. One remarked: "If these children are suffering from the cold, we would like to try it ourselves." One or two who came to scoff remained to take notes.

The conference which followed in the nursery building manifested the same spirit of enthusiastic and hearty commendation and officially set the stamp of approval upon the open air school idea. It was a decisive victory. By the next morning every paper in the city had told the people of Chicago what fresh air was doing for the little group of children on the snowy roof, and had made the story vivid by striking photographs of the boys and girls in their picturesque Eskimo suits which were guaranteed to attract the attention and arouse the interest of the most indifferent reader. This definite demonstration of the remarkable effects which the fresh air treatment brings about in sick children set people in general, fathers and

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## Preface

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mothers, as well as teachers and doctors, to wondering what would be the results of similar treatment upon well children. As a result of the general public interest, the Board of Education of the City of Chicago on December 29, 1909, voted to establish twenty open window rooms in the Graham school, where the experiment had been under way in two rooms since September. On September 10, 1910, orders came from the superintendent's office to open all the windows in all the public schools of the city at least three times a day. The twenty thousand windows were opened.

The school child no longer has to acquire tuberculosis as an indispensable preliminary to obtaining fresh air for his schoolroom. Normal children are beginning to share a little in the special privileges of the sub-normal. The day may even come when our youth will not be compelled to pay the penalty for being bright and strong and well by being deprived of the individual attention and the sanitary surroundings which are to-day the boon of the physically and mentally deficient child. Toward the attainment of this ideal the open air school, especially as modified to include the non-tuberculous, marks one long step.

Many people have cheerfully co-operated in the work of this school. The community is full of friends for such children and they have rallied to the cause wherever and whenever their services could be utilized. It will be almost impossible to give full credit by name to all the friends who have helped in this movement, but we wish especially to acknowledge our obligation to these persons for their help in the work and for assisting us in the preparation of this book: The ladies of the Winnetka Congregational Church, who made the Eskimo suits for the children of the school; the Chicago Public School Extension Committee, who sent a story-teller to amuse the children once a week; the members of the consulting staff, Dr. W. A. Evans, Dr. John A. Robison, Dr. H. B. Favill and Dr. Theodore B. Sachs, who gave generously of their time and interest to the supervision of the school; Dr. James A. Britton, physician in charge, to whom more than to any other one person is due the credit for the conduct and success of the school, and whose carefully kept records have furnished our statistics; Miss Myrn Brockett, superintendent of the Mary Crane Nursery, who, with the physician in charge, had general supervision of the details of the management and who imparted to the school in remarkable degree the friendly, home-like spirit of the nursery life; Miss Alice Bunker, the efficient teacher provided by the Board of Education, and Miss Ruth Gamble, matron in charge. We have elsewhere acknowledged our indebtedness to Mr. Frank E. Wing, Superintendent of the Municipal Sanatorium, Principal Wm. E. Watt, of the Graham School and Health Commissioner W. A.

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## Preface

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Evans for the chapters which they have contributed to this book. Acknowledgement is also due Miss Mabel Brown Ellis, of the United Charities, for the part she has had in building the book. Of those in other cities who have assisted us, we thank the "Survey" for several illustrations, Dr. Leonard P. Ayres, of the Russell Sage Foundation, for the permission to reprint the bibliography of the open air school movement from his recent book on Open Air Schools, and Dr. Wm. Charles White, of Pittsburg, Pa., Dr. Geo. W. Goler and Mrs. Helen B. Arnold, of Rochester, N. Y., Dr. Helen C. Putnam and Dr. Ellen A. Stone, of Providence, R. I., Miss Sara E. Coates, of Newport, R. I., Mr. S. H. Stone, of Boston, Mass., Dr. Henry F. Stoll, of Hartford, Conn., Superintendent of Schools Randall Spaulding, of Montclair, N. J., the Superintendent of Schools of Cambridge, Mass., and Mr. Frank H. Mann, Miss Elizabeth Crowell, Miss Mary C. Plunkett, Mr. W. Frank Persons, Mrs. Edward Mandell, Principal John Doty, and Associate Superintendent of Schools Straubenmuller, of New York City, for information concerning the open air school work in their respective cities.

If this simple record of the results of open air treatment upon a group of Chicago children predisposed to sickness and failure, proves of service in calling attention to the physical needs of all school children and of help in winning them their fresh air rights, the purpose of both school and book will have been accomplished.

SHERMAN C. KINGSLEY.

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OPEN AIR — OPEN MINDS

## Chapter One

### The Story of the Children

SCHOOL AND FAMILY HISTORY OF THE CHILDREN ATTENDING THE ELIZABETH  
McCORMICK OPEN AIR SCHOOL FROM JANUARY TO JUNE, 1910. SCHOOL  
SONGS AND YELLS.



CANDIDATES FOR OPEN AIR SCHOOL TREATMENT.



INFECTION THROUGH FOOD.

The man, who is in the third degree of Tuberculosis, and who coughs constantly, is cutting cabbage for the winter supply of sauer kraut for the family.

## The Story of the Children

**L**EO was recruited from the shivering ranks of that little army of children who supply the family fuel by picking coal along the railroad track. The basement rooms to which, in the raw winter mornings, he carried home his heavy sack of broken bits of coal were so dark that a lamp was kept burning all day long. His widowed mother supported her family of three by taking in washing. For just half his short life, Leo has been almost constantly ill.

Though he was weaker physically than many of his schoolmates, he had a much more active mind than most of them. He was a hard worker and very ambitious, showing great interest in everything pertaining to school-work. His deportment improved wonderfully after he entered the school.



**J**OHN'S father deserted two years ago. Since that time, the only income of the family of five has been the seven dollars a week earned by an older son in a printing-office, plus the few cents a day which the tubercular mother made, in her spare moments, by tying twine for a tag manufacturing company. She refused a chance to send John to Colorado for free treatment, saying that he was now old enough to go to work and they could no longer get along without what he might earn.

John exhibited great interest in his school work. He was a very intelligent child and had the most active mind of any boy in the school.



**O**TTO was a Norwegian boy. His father was a laborer who made about ten dollars a week. Their rooms on the second floor rear were very dirty and poorly lighted. Otto slept with a brother who had tuberculosis and was later sent to Naperville for treatment.

**Leo B.**      **Age**      **Grade**  
                    **12**      **4-5**



**John M.**      **Age**      **Grade**  
                    **13**      **7-8**



**Otto B.**      **Age**      **Grade**  
                    **9**      **4-5**



## Open Air Crusaders

**Joseph S.**    **Age**    **Grade**  
                    12        5-6

**Molly S.**        **Age**        **Grade**  
                      9            5-6



Otto was a quiet lad who attended strictly to his studies. He had an active mind and did very creditable work in the Open Air School.

\* \*

THE father of Joseph and Molly died of tuberculosis brought on by exposure and lack of food, and for a time it seemed as if the fate of the children might be similar. But a wealthy friend assumed the burden of the family support and they are now comfortably provided for.

At times Joseph worked very hard at his lessons and then apparently found it necessary to rest awhile from his exertions. He seemed never to lack interest in his work, but there were days when he appeared to be incapable of making an effort. Probably as his health improves, he will be able to achieve better results in his studies.

Molly, unlike her brother, was never too exhausted to study. She was a faithful little worker, ever on the alert to master each new subject.

\* \*

**Elinor M.**        **Age**        **Grade**  
                      12            5-6

THE place which Elinor called home was a five-room rear cottage, built up close to the front house. The back windows looked on a narrow, dirty alley. The neighborhood was congested, the house dark and gloomy. Both father and mother drank to excess.

Elinor was quite slow in some of her studies at first, but through perseverance won and was the brightest pupil in her class at the end of the year.



## Open Air Crusaders

**A** KIND landlord had sealed up all the windows in John's basement home so that it was impossible to open any of them. Damp, dirt, and disorder made a bad combination for the five children whose father had died of tuberculosis, and whose mother could, at best, earn less than five dollars a week by day-work.

It was not strange that in school John at first appeared to be very dull. The outdoor air and nourishing food combined, however, to make him improve very rapidly, and by the end of the year he was standing among the highest in his lessons.



**F**RIEDA lived in a large, airy flat in a fairly good neighborhood. Her mother had consumption and of the nine children, three showed traces of infection. Frieda had a slight cough and marked loss of appetite and weight.

She had been considered almost a hopeless case in school so far as ability to keep up with her grade was concerned. In the Open Air School, she was put into the fifth grade, showed improvement in the first two months, and while she did not develop into a brilliant student, she was not only able to keep up with her class but will enter sixth grade with them in the fall.



**O**NE year ago, Joseph had a severe attack of pneumonia. It was followed by night-sweats, chills and fever. Heart complications increased the handicap against which the lad was carrying on a losing fight when the nurse found him. She found also the mother and a little brother in the incipient stages of tuberculosis and began a course of home instruction which has brought about marked improvement in the whole family.

Joseph did his school work well but was three years behind in his studies. If his health continues to improve, he will probably be able to make up some of his lost time.

**John O.**

|            |              |
|------------|--------------|
| <b>Age</b> | <b>Grade</b> |
| 10         | 4-5          |



**Frieda F.**

|            |              |
|------------|--------------|
| <b>Age</b> | <b>Grade</b> |
| 12         | 5-6          |



**Joseph G.**

|            |              |
|------------|--------------|
| <b>Age</b> | <b>Grade</b> |
| 11         | 3-4          |



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## Open Air Crusaders

---

**Maurice M.** Age 10 Grade 5-6



**T**HE case of Maurice illustrates the need of laws to compel the removal of the tuberculous from the homes which they endanger. Maurice's father, who was in the advanced stages of consumption and would not take proper precautions, absolutely refused to go away for free treatment, although he fully realized that his presence might mean infection for others, and knew that his wife and two children had not enough to eat while he remained at home. His death in April enabled his wife to go to work in a laundry at \$6.00 a week, which remains the sole income of the family. The little girl has incurable heart trouble. Maurice is an incipient case of tuberculosis.

He was very listless during much of the time and seemed too tired to do his school work. Toward the end of the year he improved, and as he led the school in gain in weight during the month of June, he will doubtless do much better work next year.



**Sarah S.** Age 12 Grade 4-5



**W**HEN found by the nurse, Sarah was sleeping in an eight by ten bedroom with one six by three window which was usually closed. Two brothers slept in the same room. One month later, the records show that Sarah was sleeping alone in a large room with two windows wide open.

She was one of those who brought reports of slow progress in other schools. She seemed very nervous, listless and physically unable to work. On coming to the Open Air School she made a great effort to succeed and her work showed great improvement.



## Open Air Crusaders

**M**ARY'S father died of pulmonary tuberculosis when Mary was two years old. Her brother was also tubercular and had been at the Naperville Sanatorium for treatment. Her mother supported the three children by night scrubbing. The little rear cottage where they lived was scrupulously clean and Mary had excellent care.

She was a bright student but so frail that she could not be allowed to do as much work as she was mentally capable of accomplishing. She took great interest in her lessons and was apt to work beyond her strength.



**T**HE rag shop over which Margaret and John made their home was reported to the Health Department as a disease-breeding spot, and the family were compelled to move to more sanitary surroundings. Of the family of ten, six have tuberculosis.

Little Margaret has had a hard struggle to complete the first grade. She entered school for the first time in September, 1908. Early in October of that year she contracted scarlet fever and was out of school until January, 1910, when she was admitted to the Open Air School. She was present twenty-six days when she met with an accident which kept her at home five weeks. She is an exceptionally bright child and if she could be present an entire school year, would easily make two grades, but she is not strong enough to warrant us in pushing her in her work.

John was very listless at the beginning of the year. The physical attitudes he assumed indicated exhaustion of body and mind. After the first month, his work showed marked improvement until May, when he again lost interest for a short time but he more than made up for it during the month of June.



**M**ILDRED slept with her sister in an eight by ten bedroom with one small window less than one foot from the next building. Her father was an Italian laborer on an

**Mary B.**      **Age**      **Grade**  
                    **12**      **6-7**



**Margaret B.**      **Age**      **Grade**  
                              **7**      **1-2**



**John B.**      **Age**      **Grade**  
                    **12**      **6-7**

## Open Air Crusaders

**Mildred C.**    **Age**    **Grade**  
                   12        7-8



average income of ten dollars a week. There were four other children in the family.

Mildred worried lest the Open Air School might be discontinued, for she knew that would end her school education, as she is unable to climb stairs or to attend school indoors. She was so eager to attend school this year that she tried three times during September but failed, being present only two and one half days in all. In February she heard of the Open Air School, made application at once and was admitted. Her physician had forbidden her attendance at school and had advised her living out of doors. Her health has improved very much and she never had a headache after coming to the school. She used to suffer constantly while at home. She studied very hard indeed and was delighted to think that she was able to finish the seventh grade in half the time required.]



**Oliver W.**    **Age**    **Grade**  
                   5        1-1

**Wyburn W.**    **Age**    **Grade**  
                   4        1-1



**O**LIVER and Wyburn have a history of tuberculosis on both sides of the family.

Their own father and their mother's father died of the disease and the father's sister is now an advanced case. Since the father's death, the children have attended the Mary Crane Nursery. Although they come from a good home, where they receive excellent care, they have always been pale, undersized and delicate. Last fall both children had tonsils and adenoids removed.

Oliver is an extremely intelligent child and could easily have made the grade in the eighteen weeks that he attended school. But he is very nervous and it was thought best to allow him a full year in the grade so that he might progress slowly and naturally without any urging.

Wyburn was too young to enter the school but he was allowed to gather whatever crumbs of knowledge he was able to assimilate. He very rarely awoke to attend the afternoon sessions. He learned to read and write a little but care was taken not to overtax his strength.

## Open Air Crusaders

**C**HARLES came from a home where all conditions seemed favorable to the development of a healthy boyhood. His father made a good living; there were only two children; the family lived in a large house of their own, with a big yard; Charles slept alone in a light, airy bedroom. The mother was not strong but had never been diagnosed as tubercular. Yet Charles had the typical symptoms of the incipient stages of tuberculosis.

In school he was very quiet at first and showed no interest in the other children, but he was soon as active as any of them. He was among those who were very insistent for home work. In fact, he talked so much at home about his lessons that his mother urged that he be allowed to take his books with him at night to study. As all home work was positively forbidden, his request could not be granted. Although all his studying was done in school hours, he made two grades.



**U**NTIL two months before her father died of tuberculosis, Julia slept in the same bed with him. Her home was at that time in a dark, damp basement, where the sunshine never came. Her mother worked in a tailoring-shop for nine dollars a week and the grandmother took care of the three children.

Julia was exceptionally poor in all her studies when she entered the school. She improved rapidly, however, and is now up to grade in all her work.



**H**ARRY was described by his former teacher as "a very nervous child." His childhood, together with seven brothers and sisters, a sickly mother and an abusive father, was spent in three small bare rooms on the third floor of an old tenement building. He never had any playground but the street. Harry has always suffered from constipation and pain after eating.

Though he was far from well when he came to the school, his mind was very active. He

**Charles M.**    **Age**    **Grade**  
9                    3-5



**Julia K.**            **Age**    **Grade**  
10                    2-3



**Harry L.**            **Age**    **Grade**  
14                    5-6

## Open Air Crusaders

**Walter N.**    **Age**    **Grade**  
                  12       6-7

was promoted to the fifth grade, but as his health failed to show marked improvement, he was sent to the Winfield Sanatorium.

**Margaret N.**    **Age**    **Grade**  
                  10       4-5



**T**HE father of Margaret and Walter died of hæmorrhage from the lungs after "a cough" lasting ten years. Their mother has been coughing and spitting blood for five years. There are six children, four of them in the first stages of tuberculosis, with intestinal complications which are probably tubercular. Of the two bedrooms in their second-floor rear apartments, one was fairly good; the other opened on the bath-room and had no other source of ventilation.

At the beginning of the school-year, Margaret never smiled and seemed most unhappy, but before school was over, she took a far more cheerful view of life, lost her discontented look and did much better work in her lessons.

Walter also improved wonderfully in disposition. Though he had been sullen and inclined to idleness he became happy and industrious and showed a marked interest in his studies.



**Frances G.**    **Age**    **Grade**  
                  13       4-4



**F**RANCES is one of thirteen children who lived in a little frame cottage directly back of the stockyards, where the odor was nauseating. Her father died one year ago of tuberculosis. The visiting nurse had never been able to induce him to take the slightest precautions. He expectorated in the sink and on the floor, and forbade any one of the family to open a window. The only outside air which this household of fifteen got at night came through a broken window-glass which they were too poor to replace. Frances slept with her mother who was also tuberculous. She could not afford milk and until it was supplied her, breakfasted on bread and coffee.

In school, Frances made the least progress of any of the children. She was such a little

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## Open Air Crusaders

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weakling that she was allowed to rest during the entire afternoon, very rarely indeed coming into the tent for afternoon recitations. However, during the month of June, she showed much more interest than at any time during the year.



**W**HILE Eileen's mother was at the Winfield Sanitorium for Tuberculosis, the five young children left at home saw an older sister die a most painful and prolonged death from the same disease. They all slept in rooms connected by archways, so that although the inclosed space was large, it was practically the same room. The family were very poor.

Eileen's report showed that she was absent from school seventy-five days during the preceding year. In the Open Air School, she was very slow in her work at first, but took a great deal of interest in her lessons and made rapid progress.



**F**RANK and Joseph lived with their mother and little sister on the third floor, rear, of a crowded tenement. Their father deserted and went back to Bohemia just before the sister was born. The mother made an uncertain living by finishing coats, at which she seldom earned as much as three dollars a week. The children helped by pulling basting-threads. When found, the woman was in the incipient stage of tuberculosis and her eyesight was failing fast. Dispensary treatment and glasses were provided and the family was pensioned for six months so that the mother could take a rest. She obeyed instructions, responded readily to treatment and is now an arrested case and able to work a little, though the income still has to be supplemented.

Frank was in second grade when he came to the school. In spite of the fact that he lost several weeks while detained at home with the measles, he will enter fifth grade in the fall.

Joseph was one of the liveliest little ones that we had in the school, but he takes as much interest in his work as in his play and completed two grades during the year.



|                  |            |              |
|------------------|------------|--------------|
| <b>Eileen M.</b> | <b>Age</b> | <b>Grade</b> |
|                  | 10         | 3-4          |



|                 |            |              |
|-----------------|------------|--------------|
| <b>Frank F.</b> | <b>Age</b> | <b>Grade</b> |
|                 | 11         | 2-5          |

|                  |            |              |
|------------------|------------|--------------|
| <b>Joseph F.</b> | <b>Age</b> | <b>Grade</b> |
|                  | 8          | 2-4          |



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## Open Air Crusaders

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**Morris A.**    **Age**    **Grade**  
                 10        3-4



**M**ORRIS comes from a family where the mother and five brothers and sisters all show in thin faces, dull eyes and sallow skins the results of under-nourishment and poor living conditions. Morris and his father, who has had a "cough" for a year, slept in a basement bedroom with one window open just a little because the mother was afraid of the night air.

Morris was very poor in his work when he first entered the school. He took no interest in his lessons and required to be urged to accomplish any seat work at all. His interest increased very rapidly, however, and he induced several of his playmates to seek admittance to the school. Since they were in robust health, we were obliged to refuse their request. As his health improved, his interest in his studies became so great that he deemed rest periods a waste of time, for he was anxious to spend every minute possible upon his work.

**Carrie C.**    **Age**    **Grade**  
                 12        5-6



**I**N spite of the fact that Carrie's father is in the second stage of tuberculosis and she herself is an incipient case, she was not permitted to go to Algonquin with the other children because of her approaching confirmation. "If she is sick," said the clergyman, in the child's presence, "all the more reason why she should be confirmed. She is going to die anyway."

Carrie found great difficulty in mastering her studies but she was very anxious to succeed and although she was obliged to be absent during June, she will enter the sixth grade in the fall.

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## Open Air Crusaders

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**R**UTH is the oldest of five children. Her father, a cigar-maker, supports his family of ten on a wage of \$13.00 a week. Their second story rooms are very clean and fairly well lighted.

The family came to the country from Kiev, Russia, when Ruth was eleven years old. She speaks purer English, however, than many of the children born in America. She is very anxious to become proficient in all branches of study taught in our schools and unless carefully watched, is apt to work beyond her strength. She made two grades this year.



**T**ONY came to this country from Italy six years ago. He has never been well since. His father, a laborer, is able to rent only four small rooms, facing on a dirty alley. Tony slept with his two brothers in a dark bedroom with one window which was never opened. His parents refused to let the boy go to Camp Algonquin with the other Open Air School children in June because they wanted him to learn the barber trade and not until threatened with the Juvenile Court would they consent to his going.

Tony's report from the school from which he came was most discouraging, both as regards scholarship and deportment; in fact, a petition had already been filed to have him transferred to the Parental School as unmanageable. Though thirteen years old, he was only in the fourth grade. After being at the Open Air School a short time, he showed such a desire to improve that he was allowed to try the fifth grade work, and in June was passed into the sixth grade.



**Ruth E.**      **Age**      **Grade**  
13      5-7



**Tony F.**      **Age**      **Grade**  
13      4-6



## Elizabeth McCormick School Songs

For we have —  
Cold sprays that give us  
Cheeks like the rose,  
Temperatures that are normal,  
This our record shows,  
Appetites so hearty,  
Our weight grows and grows.  
We're the Elizabeth McCormick  
Cold air Eskimos.  
That goes.

Eat, eat, keep on eating,  
Sleep, sleep, keep on sleeping,  
Breathing fresh air night and day,  
Happy in our work and play.

We're going to the country,  
Hurrah! Hurrah!  
We'll take our blankets with us,  
Our Eskimo suits of gray.  
We'll take our teacher with us,  
Hurrah! Hurrah!  
For off to fair Algonquin  
We're on our way.

Now, if you'll kindly listen,  
We'll tell you why  
It's easy to grow husky  
And never, never die.  
We're going to the country,  
It's truly so,  
And it's eat and sleep and good fresh air  
That makes us grow.

If thirty-three per cent of the children of the state leave school before the close of their twelfth year, we must manage somehow to give them, before we lose control of them, a fair working knowledge of the disease and how to prevent it.

ROGERS.



A BASEBALL GAME AT CAMP ALGONQUIN



"WE ARE GOING TO KEEP HEALTHY, ALL RIGHT, ALL RIGHT"

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## Open Air Crusaders

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### THE HARTFORD (CONNECTICUT) SCHOOL YELL

Who are we? Who are we?  
We don't drink coffee, we don't drink tea.  
We're for fresh air day and night.  
We're going to keep healthy  
All right, all right.

### A CHICAGO TUBERCULOSIS INSTITUTE SCHOOL SONG

To take our food and chew it all,  
Is as necessary quite  
As learning how to read and spell,  
Do 'rithmetic and write.  
So when we chew, let's count to ten  
Before the bite goes down,  
This happy little school will then  
Be the healthiest in town.

Shall we avail ourselves of the knowledge we have, and address our efforts to the real work, which is not to be found altogether in quarantine, disinfection, establishing dispensaries, furnishing hospitals, camps or school, but in preventing disease in the home, and in the school by training our children's bodies to resist disease?

GOLER.

I would rather ride on earth in an ox-cart with a free circulation than go to Heaven in the fancy car of an excursion train and breathe bad air all the way.

HENRY DAVID THOREAU.

Watch the child as the potential tuberculosis seedling.

PHILIP.

The need of protecting the child is shown by the fact that about fifty per cent of children living in the crowded districts become infected by the time they are five years old. Regulation of home conditions, better school hygiene, the segregation of actively tuberculous children, and open air schools for those who have latent tuberculosis are measures that should be applied more extensively; the more so because the child shows a strong tendency to recover, and the application of open air methods seem even more effectual in children than in adults in preventing and curing the disease.

TRUDEAU.



THE FLAG-RAISING ON WASHINGTON'S BIRTHDAY

## Chapter Two

### The Story of the School

TUBERCULOSIS A HEAVY BURDEN UPON CHARITY ORGANIZATIONS.— ONLY SALVATION IS PREVENTION.—ELIZABETH McCORMICK OPEN AIR SCHOOL A PREVENTIVE MEASURE.—CO-OPERATION OF SCHOOL BOARD SECURED.—ROOF OF MARY CRANE NURSERY CHOSEN AS SITE.— GRANT GIVEN FROM ELIZABETH McCORMICK MEMORIAL FUND.— NEED OF SCHOOL SHOWN BY FAMILY POVERTY, CHILDREN DEBARRED FROM SUMMER OUTINGS, CHILDREN BACKWARD IN SCHOOL.— SCHOOL OPENED OCTOBER 6, 1910; ENROLLMENT INCREASED FROM 25 TO 35.—ESKIMO SUITS PROVIDED; OTHER CLOTHING.—EQUIPMENT OF NURSERY BUILDING.— ROOF EQUIPMENT, PINE TREES, STUDY TENT, SCHOOL SUPPLIES, SHELTER TENT, STORE-ROOM, TOILET.—THE MONTH AT CAMP ALGONQUIN.— RESULTS OF SCHOOL, EDUCATIONAL AND PHYSICAL.— ITS INFLUENCE UPON HANDICAPPED CHILDREN; UPON NORMAL CHILDREN.— AS AN EDUCATIONAL FORCE, CHILDREN ARE BETTER THAN CHARTS.



THE SCHOOL WHERE NO ONE FAILED

## The Story of the School

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Perhaps the heaviest burden laid upon the United Charities of Chicago by any single cause is that which results from tuberculosis. It has for many years constituted a great relief problem, but with the development of a system of tuberculosis clinics in any large city, a new and magnified duty as well as a new opportunity are laid upon the heart and conscience of its charity workers. Every day brings to their attention men, women and children who can be saved if given a chance. This has been demonstrated again and again in every large city in the past few years but the price must be paid. While consumption is no respecter of persons, the greater number of its victims are found in the homes of the poor. We recently made a study of the income in 200 families in which there is one or more cases of tuberculosis. They were living on about six dollars a week. The average number of rooms occupied was a little over three. You cannot have consumption in three rooms on six dollars a week with any success. The poor cannot afford it; the community cannot afford it. The entire budget of the best financed charity organization in the world cannot adequately provide diets, sleeping appliances for porches, better living quarters, rent and an equivalent for wages, which will give necessary rest and cessation from toil to the victims of the disease. The only salvation is prevention. Direct warfare against the "White Plague" must be supplemented by flank movements which will make more and more territory impossible for the disease. Increased resistance and bodily vigor are essential and the foundations must be laid in childhood.

The Open Air School conducted through the year of 1909-1910 by the United Charities of Chicago in co-operation with the Board of Education was one such effort. During the preceding summer, the Chicago Tuberculosis Institute had conducted an Open Air School for thirty children for about as many days. It gathered together a group of limp, pallid, physically blighted children. They were listless, inattentive, uninterested and uninteresting. There was not energy enough created in the body to light the mind. A thirty days' regime of intelligent care and feeding, of exercise and rest resulted in an average gain of four pounds, and in the opinion of the teachers and other observers, brought these pupils up to the normal standard in alertness and ability to sit up and take instruction and to keep up

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## Open Air Crusaders

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sustained interest in their school work. In the minds of many people this seemed all very well as a warm weather enterprise, but they felt that it would necessarily be put aside with summer clothing at the approach of cold weather. To convince these doubters and to profit by progress already made, it seemed very desirable that the experiment should be conducted here, as it had been elsewhere during the winter.

The problem of securing a site suitable for winter work was much more difficult. Fortunately for the city of Chicago, through the generosity of Mr. R. T. Crane and his children, the Mary Crane Nursery afforded just the place needed. The Nursery is a four-story structure with a roof forty by seventy feet, constructed with the possibility of being used for a playground. On this roof is an open air tent made of asbestos board which is used in the summer time for the open air treatment of sick babies. This seemed to be the best available site. Its equipment was ready to hand.

The school was made possible by a grant from the Elizabeth McCormick Memorial Fund, a memorial to a child who although she lived but twelve years, displayed a most unusual personality and exceptional traits of character. Her interest and sympathy for the unfortunate, her thought and activities in their behalf, would have done credit to persons of maturity. The trustees of this fund are wisely encouraging and making possible movements that promise far-reaching social significance.

The attention of the United Charities has been fastened upon the physically backward child through many avenues of experience:

First, it deals with large numbers of families in which the bread winner is either incapacitated by tuberculosis or has died from it, This brings about privation which makes it almost inevitable that the children should contract disease.

Then in its extensive summer outing work, it has seen the bitter disappointment of children who, because of their weakened physical condition, were rejected by the doctors, since they could not safely romp and play with other children.

Following this matter up, we found large numbers of children throughout the city, who, on account of this condition, could not safely go to school, and if in school, could not take the curriculum offered. Many leading authorities believe that much tuberculous infection is acquired in early life; that during childhood the tuberculosis focus remains inactive, but as the child reaches adolescence and is subjected to the confinement and strain of school life, or later in adult life meets the strain then put upon him, the lessening of the bodily resistance is sufficient to permit the organisms to gain the upper hand, and active tuberculosis in some form develops.

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It is not easy, and sometimes not possible, to avoid the strain put upon persons by the stress of home and business life, but it should be entirely within our power to modify or altogether to remove harmful conditions and excessive strain in connection with school life. Any



one who has read the stories of the thirty children given in detail in the opening chapter of this book must be impressed with the futility of imposing upon such children the average school regime — of forcing them into rooms which are frequently overheated, where there is little or no moisture in the air, where in deference to ventilating systems which often do not ventilate, they are forced to spend long hours in stiff and cramped positions and to perform tasks that are impossible to their minds, dull, feeble and inactive as they are, because of the undernourished and devitalized little bodies. Some of these little people came a distance of four miles to the Open Air School. It is pathetic to think that such progress and such a response are obtained with comparative ease when one knows that there are thousands of such children in this city alone. No more convincing object lesson was in existence anywhere in Chicago last year than

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## Open Air Crusaders

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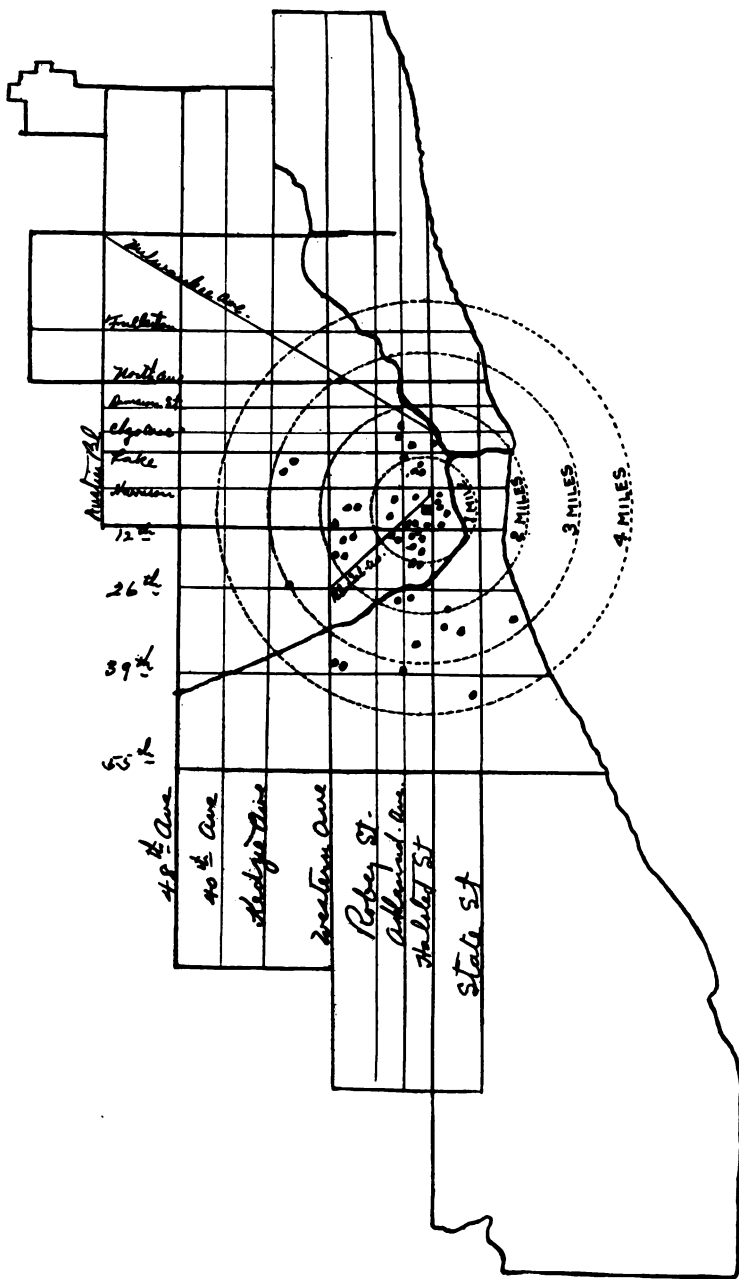
these little Eskimo clad people, on the roof four stories in the air through all the kinds of weather that could come out of the northwest or across the lake during the whole severe winter of 1909-1910.

They not only made this gain for themselves but they have helped to open the windows and get better air for all the children in the city of Chicago. Through the energetic action of our wise and capable superintendent of schools, doors and windows of all the rooms in all of the schools are to be opened three times a day, and so finally the children have won over the ventilating system.

On October 5, 1909, six children who had been receiving open air instruction on a sheltered porch at Hull House were brought to the Elizabeth McCormick Open Air School. With this as a nucleus, the number quickly increased. They came from tuberculosis clinics, visiting nurses, settlements, charity workers, public and private, from every agency that dealt with physically backward children. The enrollment, at first limited to twenty-five, was increased to thirty-five, because the pressure for admission was so great. Four girls too old for school work were given light work in the Nursery and shared in the benefits of the especially prepared food and the rest period of the pupils. Still, many more were turned away. In all, fifty-four made application for admission in spite of the fact that the idea was new to Chicago, and many people prophesied that the school could not and would not with safety to the pupils be held on the roof during the winter.

To prevent the fulfilment of so dismal a prophesy, the children were protected against the cold by picturesque Eskimo suits made of heavy blankets which they slipped on over their ordinary clothing. The peaked caps were sewed firmly to the jackets and could be thrown back if desired. Both boys and girls wore, tucked into lumberman's boots, loose-fitting blanket trousers which combined warmth with the utmost freedom of movement. Thick gloves, extra blankets and soapstones for use on extremely cold days completed the outfit, the expense of which was borne entirely by the fund mentioned. All these garments were the property of the school and each child was held responsible for nightly putting his own suit into his own locker. For the teacher a fur-lined coat and a fur cap were provided. In addition to the clothing for school wear, in some cases it was found necessary to provide underclothing, rubbers and overcoats which remained the property of the individual children.

The day nursery on the roof of which the school was held presented peculiar advantages as a laboratory for carrying on such an experiment. The equipment of the building, which included shower-bath and dispensary on the first floor, dining-room and kitchen on the third floor, store-room and tent on the roof, toilet rooms on the



DISTANCE TRAVELLED BY PUPILS OF OPEN AIR SCHOOL



EXTERIOR OF MARY CRANE NURSERY, SHOWING TENTS ON ROOF, SHELTER TENT IN FOREGROUND,  
STUDY TENT TO THE RIGHT

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## Open Air Crusaders

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first floor and roof and elevator service were given freely to the use of the school children.

The roof, illustrated on the following page, is completely inclosed by a high framework covered by wire netting. Against this netting young evergreen trees replaced during the winter the vines which covered the meshes in the summer months. The trees not only served the extremely practical purpose of a good windbreak but lent a perpetual air of Christmas festivity to the place which was reflected in the joyous faces and merry spirits of the children. When Christmas Day really came, the little trees were literally used for the purpose for which Nature had so evidently created them and stood about the roof bedecked with the simple gifts which the children had made for themselves and for the teacher and covered with the glittering crystals of the snow. Germany took her sick children to the pine forests to school; Boston put her little patients into classrooms on the roof; it remained for Chicago to bring the trees to the children and give her pupils a forest school on a city roof.

Completely encircling the tent which stood among the trees were windows which swung out, canopy fashion, making an open zone clear around the tent. These windows could be dropped on the side from which a storm might come.

The teacher, the supervisor of the school work, as well as the desks, blackboards and all equipment were provided by the Board of Education. No heat whatever was furnished in the tent but heated soapstones were placed at the feet in extremely cold weather. No one seemed to have difficulty at any time in handling pen or pencil although the thermometer often went below zero.

Outside of the inclosed tent was a large shelter tent which consisted simply of a canvas top, without sides, to protect from rain or extreme heat. Here the children took their daily naps, tied up snugly in their warm sleeping bags and stretched out full-length on canvas cots. The younger children and those who were least well, often spent the entire afternoon in rest and no one was urged to come into the tent to school if the teacher was convinced that the sleep would do him more good. Though the physical development was thus apparently put ahead of the mental growth, a glance at the record of advancement made by the pupils shows clearly that the mind was very far from suffering by such treatment.

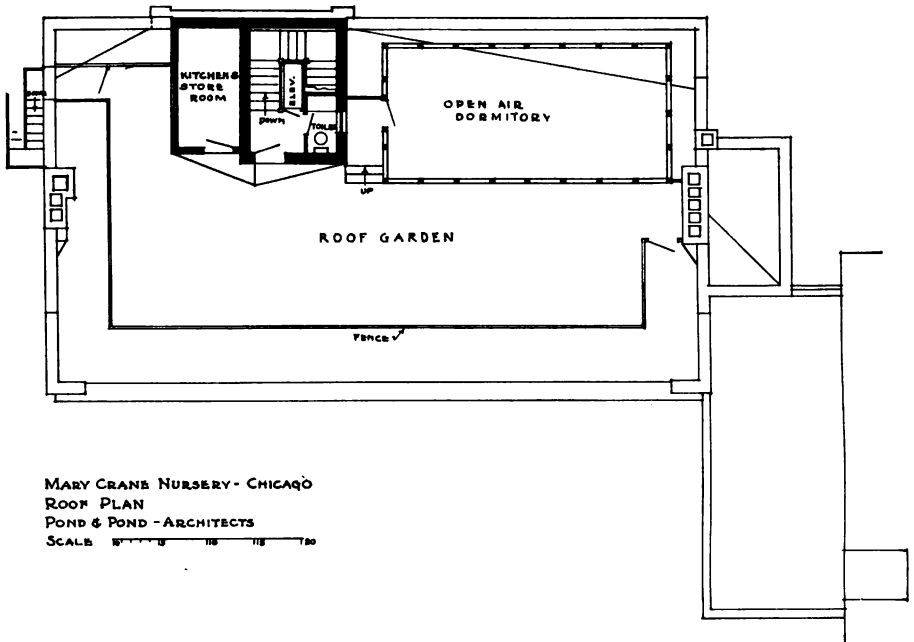
At the other end of the shelter tent stood a long table on which the hot lunch was served at nine and three-thirty. A small store-room on the roof gave space for the dish-cupboard and gas-stove where the lunches could easily be prepared by the cook. On the other side of the store-room were lockers for wraps and supplies.

Store-room, toilet and asbestos tent were already on the roof; the

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## Open Air Crusaders

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shelter tent was the only addition to be made for the school. The Elizabeth McCormick Memorial Fund which provided for the expenses of conducting the school also financed the Infant Welfare Work for which these buildings on the roof had been previously erected.

With this equipment the school was carried on from October to June. In June, pupils and teacher went for one month to Camp Algonquin, the summer camp maintained by the United Charities, where the women and children of the poorer districts of the city are given two-week outings. The beautiful grounds on the bank of the Fox River, the roomy cottages, the immaculate cleanliness of dormitory and dining-hall, the joys of camp-fires, base-ball, swimming-pool, oaks and brook impressed more deeply upon the minds of the children the high standards of personal conduct and pleasant home life which it had been one special aim of the roof school to inculcate. The changes also afforded opportunity to regulate absolutely all the conditions affecting the pupils in a way quite impossible in the city, where they must return at night to homes which, in spite of the most conscientious efforts of the visiting nurses, sometimes undid, in large measure, the good received during the day.

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## Open Air Crusaders

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The results of the year's work speak for themselves. From the teacher's standpoint, the children were almost without exception below grade. They brought records of slow progress, trouble with teachers, irregular attendance. One child had been absent seventy-five days of the preceding school year; another was already destined for the Parental School, as unmanageable: in the open air school the first was absent only six days, five because of the death of a sister, and the other completed two grades and became one of the most tractable lads among the pupils. It is not logical to ascribe all this improvement in conduct and scholarship entirely to the open air regime. The largest average attendance in any open air school from which reports could be secured was thirty-five, with most schools admitting only twenty-five, and some only fifteen. The average number of pupils to one teacher in the Chicago public schools is forty-one; in many small town schools it runs as high as sixty. Granted the same kind of teacher and the same kind of pupils, it would not be fair to expect the one with sixty youngsters to accomplish as much with each individual child as could the teacher with twenty-five pupils. On the other hand, it must be borne in mind that the sixty would be in one or two grades, while the twenty-five would range from the first to the eighth grade. In the second place, it was not usually the average teacher who was chosen to take charge of the open air room. The out-of-the-ordinary in the school appealed to the out-of-the-ordinary teacher, the teacher who under average conditions would probably be successful in bringing backward pupils up to grade and adjusting questions of discipline. But such teachers are handling average groups of children and Boston's investigation showed that only five per cent of the average school population need special treatment. Here was a group of children, all of whom were sub-normal, and it would take actual demonstration to prove that even an out-of-the-ordinary teacher could bring them successfully through the year's work under average school conditions. The Elizabeth McCormick Open Air School proved that it could be done under the special conditions there provided.

So far as the physical results are concerned, the records show temperatures lowered, an average gain in weight of four pounds, teeth put in order and kept clean, adenoids removed, a daily bath insisted upon, little bodies weakened by disease growing strong and vigorous and able to fight back against the handicaps of their inheritance and environment.

It is a pitiful thing to see a sick child whom no physician's skill can cure, but it is a far more pitiful thing to see a sick child doomed to linger along through a fretful childhood, a joyless youth and an inefficient manhood, when the right care at the right moment might

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## Open Air Crusaders

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have made him a normal, healthy, useful human being. The Elizabeth McCormick Open Air School made a strong plea for the rights of the child handicapped by tuberculosis and in so doing joined the ranks of those who plead for the rights of all handicapped children, whoever and wherever they may be. But it did more than that. It had a very marked influence in bringing about better ventilation for the schoolrooms of Chicago, where the children of the city must sit five hours a day during the school year. It has succeeded in making ventilation a live issue in the mind of the average parent, instead of relegating it to the technical debates of engineers and school boards, and the few experts who realize its importance. For educating the general public, children are better than charts.

### SCHOOLGRAMS

S. C. K.

What shall it profit a child if he gain the whole curriculum and lose his health?



Two things of which there is enough for all — fresh air and sunshine. Get yours.



The only air available from dark till sunrise is "night air." Breathe it.



Switzerland requires her school children to be in the open air at least ten minutes out of every school hour.



A question that should be asked about the ventilating system of every school — Does it ventilate?



Teach your children to make a childhood friend of the open air.



The only night air which is injurious is last night's. Open the window and let it out.

## Chapter Three

### Details of the Management

TYPE OF CHILD ADMITTED.— DIAGNOSTIC POINTS.— RECORDS.— DUTIES OF PHYSICIAN, NURSE, MATRON, ASSISTANT MATRON AND COOK.— DIET LIST.— FOOD VALUES OF TWO MENUS SERVED.— DAILY PROGRAM.— DRINKING MILK INSISTED UPON.— MILK BETTER THAN CHOCOLATE.— COLD SHOWER BATHS PROVE SUCCESSFUL.— CHILDREN LEARN TO SLEEP DURING REST PERIOD.— COTS BETTER THAN STEAMER CHAIRS.— GYMNASTICS LIMITED TO BREATHING AND MARCHING EXERCISES.— CLOTHING PLANNED FOR WARMTH, LIGHT WEIGHT AND ACTIVITY.— DURING 1910-1911, THE SCHOOL WILL EXPERIMENT WITH WATER-PROOFED MATERIAL, PAPER-LINED.— TYPE OF BUILDING BEST FITTED FOR OPEN AIR WORK NOT YET DETERMINED.



THE MONTHLY EXAMINATION BY THE PHYSICIAN IN CHARGE



TEMPERATURE AND PULSE WERE RECORDED TWICE DAILY

## Details of the Management

The open air school is intended for any child in poor general physical condition who is not suffering from open tuberculosis or other contagious disease. While it has happened that a large per cent of the children who are usually admitted to open air schools are positively tubercular, it is not at all intended that the benefits of these schools should be given exclusively to that class of children. As it was primarily planned, however, that the Elizabeth McCormick Open Air School should be used exclusively for tubercular children, the following were the principal diagnostic points used in determining the suitability of the applicants:

1. Family history. (In our group, 63 per cent of the children had a case of positive tuberculosis in their immediate family.)
2. General type of body and state of nutrition.
3. Fever.
4. Cough.
5. Dullness or breath changes. (Rales were usually found to indicate open tuberculosis.)
6. Pirquet test.
7. Absence of tubercular germs in sputum or throat swabbing.

A great deal of time and effort was used to keep careful and complete records during the entire school year. The records consisted of:

1. Previous school record.
  - (a) Days lost during the previous school year.
  - (b) Mental condition.
  - (c) Relative standing so far as grade was concerned.
2. Family physical history.
3. Present physical condition of child.
4. Temperature and pulse twice daily.
5. Weight once a week.
6. Examination by physician once a month.
7. Examination by physician on account of any special indication.
8. Living condition at home with special reference to size of sleeping room and amount of light and air.

To obtain such full information, the duties of the staff made each member responsible for a certain portion of the records.

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## Open Air Crusaders

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### DUTIES OF PHYSICIAN:

1. To examine children for admission.
2. To make monthly examinations and also special examinations as indicated.
3. To supervise records.
4. To pass on all routine and submit same to consulting staff for approval.
5. To arrange diet.

### NURSE:

1. To take morning temperature and observe general condition of children each day.
2. To report any case of a rise of temperature of  $100^{\circ}$  or more or any other unusual symptom to the physician.
3. To inspect the home and advise parents about sleeping rooms, food, daily routine, etc.

### MATRON:

1. To have immediate charge of all physical care of the children while in the school.
2. To give baths.
3. To see that the children are properly clothed.
4. To plan meals.
5. To take the afternoon temperature.

### ASSISTANT MATRON:

1. To assist the matron.
2. To look after washing and cleaning.
3. To assist the cook.

### COOK:

To purchase, prepare and serve meals.

As a general guide in planning the meals, the following suggestive diet list was approved by the consulting staff:

#### Breakfast at home:

- 1 glass of milk.
- Cereal with cream and sugar.
- 1 or 2 eggs.
- Bread and butter.

#### Lunch at school, 9:00 A. M.:

- 1 glass of milk, cold or hot, and bread; or
- 1 bowl of soup and bread.

#### Dinner at school:

- 2 glasses of milk and bread and butter.
- 1 bowl of soup.
- Meat, beef or mutton, boiled, roast, stew or hash. (Fish or eggs may be substituted.)
- Vegetables—(one) potatoes, peas or beans. (Green vegetable also when possible.)

Dessert. Fruit, raw or stewed; or pudding.

#### Lunch at school, 3:30 P. M.:

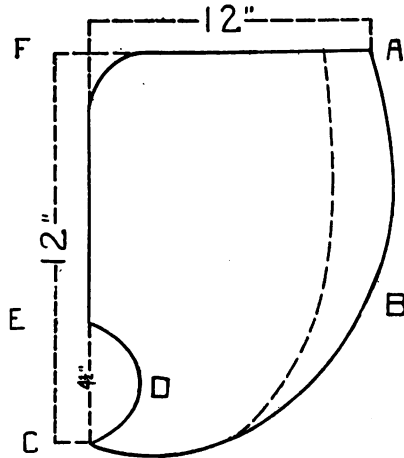
- 1 glass milk, bread and butter, and occasionally jam, jelly or molasses.

#### Supper at home:

- 1 glass of milk and bread.
- Meat or eggs.

### HOOD

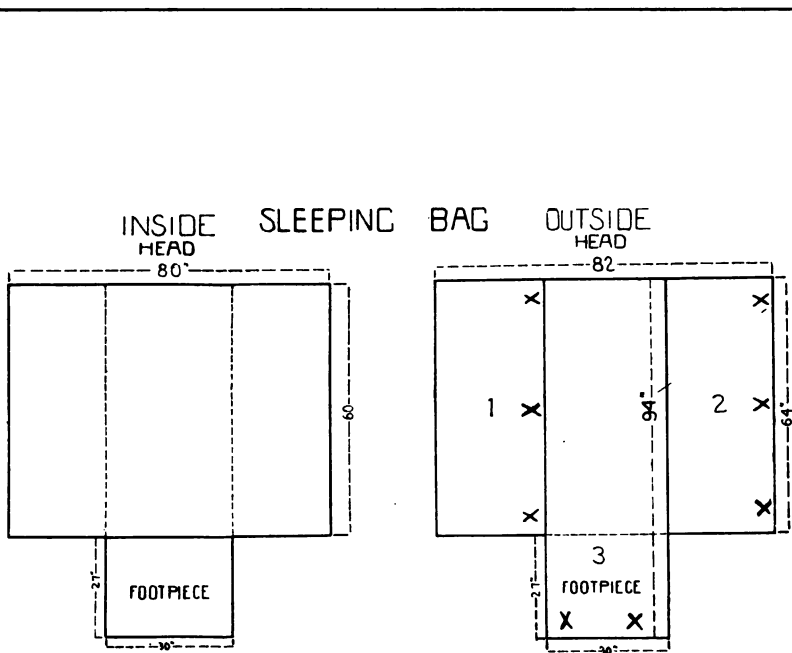
- AF placed on fold of goods.  
FC straight edge of goods: stitch in flat seam.  
ABC face line, folded back when in use.  
EDC line where hood is attached to collar of suit.  
x tapes to tie hood closely about the face.



### DIRECTIONS FOR MAKING THE ESKIMO SUITS.

(By Request.)

The Eskimo suits are simply double-breasted pajamas cut from heavy woolen blankets. The suits are to be worn over the other clothing, so large sizes are used and the legs and sleeves are shortened to fit the individual. To the collars are fastened hoods with tape so placed as to tie snugly about the face in severe weather. The outfit is completed by a pair of heavy felt boots, the soles covered with material like the suit, with a thick interlining of paper.



### DIRECTIONS FOR MAKING SLEEPING-BAG.

(By Request)

Inside: Shoddy woolen blanket 60 inches by 80 inches.

Footpiece: 1-6 of blanket, added to center of lower line.

Outside: Dark brown canvas, 28 inches wide, cut in three strips, 64 inches, 64 inches and 94 inches, respectively, and stitched together as shown in cut.

Edges of canvas are folded back to cover edges of blanket, leaving 1 inch edge of double canvas.

Crosses show position of 12-inch tapes.

In use, flaps are folded in order as indicated.

## Open Air Crusaders

It is intended that each child should drink at least three pints of milk a day. Where the home conditions are such that milk for breakfast and supper cannot be provided, a charity organization is asked to supply the milk for them. Children who are not in the habit of drinking milk frequently object, but no child has been found who did not learn to like milk, after being persuaded to drink it for a few days.

At first children were given cocoa or chocolate in place of milk at some of the lunches if they desired it, but it was found that the children whom we permitted to drink chocolate would also drink tea and coffee at home, which is considered objectionable.

A general rule that faces and hands be always washed before dinner and lunch is carefully enforced.

The food values of two menus actually served are appended.

### SAMPLE MENU, SERVED MARCH 22, 1910.

HAMBURGER MEAT CAKES.

BROWN GRAVY.

HASHED BROWN POTATOES.

SPINACH.

BREAD.

BUTTERINE.

MILK.

GINGERBREAD.

| Quantities                               | Cost        | Calories     |
|------------------------------------------|-------------|--------------|
| 8 pounds meat at 12½ cents . . . . .     | 1.00        | 5280         |
| ¾ pounds vegetables . . . . .            | .03         | 180          |
| ½ pound bread . . . . .                  | .02         | 608          |
| ⅛ pound fat . . . . .                    | .03         | 450          |
| 15 pounds potatoes . . . . .             | .15         | 4650         |
| 12 pounds spinach . . . . .              | .90         | 1320         |
| 3 pounds gingerbread . . . . .           | .26         | 4500         |
| 10 pounds bread at 3 cents . . . . .     | .30         | 12150        |
| ½ pound jelly at 15 cents . . . . .      | .08         | 645          |
| 35 quarts milk at 7 cents . . . . .      | 2.45        | 22750        |
| 1 pound butterine . . . . .              | .20         | 3600         |
| <b>Total</b> . . . . .                   | <b>5.40</b> | <b>56133</b> |
| Number of children served . . . . .      |             | 32           |
| Teacher, matron and attendants . . . . . |             | 5            |
| Cost per individual . . . . .            |             | 14.6 cents   |

## Open Air Crusaders

### SAMPLE MENU, SERVED MARCH 21, 1910.

#### BEEF STEW WITH VEGETABLES.

#### BISCUIT BREAD.

#### BUTTERINE.                      MILK.

#### APRICOT TAPIOCA.

| Quantities                                     | Cost        | Calories      |
|------------------------------------------------|-------------|---------------|
| 8 pounds beef-shoulder at 12½ cents . . . . .  | 1.00        | 5,250         |
| ¼ pound butterine at 20 cents . . . . .        | .05         | 900           |
| 5 pounds vegetables for stew . . . . .         | .15         | 200           |
| 16½ pounds potatoes. . . . .                   | .17         | 4,960         |
| 3 pints flour . . . . .                        | .09         | 4,950         |
| 1½ ounces baking powder . . . . .              | .03         |               |
| ⅛ pound butterine . . . . .                    | .03         | 450           |
| 1 cup milk . . . . .                           | .02         | 80            |
| 2 pounds dried apricots at 12½ cents . . . . . | .25         | 780           |
| 1½ pounds tapioca at 9 cents . . . . .         | .12         | 2,475         |
| 4 cups sugar at 5½ cents . . . . .             | .11         | 3,720         |
| 10 pounds bread at 3 cents . . . . .           | .30         | 12,150        |
| ¾ pound butterine at 20 cents . . . . .        | .15         | 2,550         |
| 31 quarts milk at 7 cents . . . . .            | 2.17        | 20,150        |
| <b>Total . . . . .</b>                         | <b>4.64</b> | <b>58,615</b> |
| Number of children served . . . . .            |             | 28            |
| Teacher, matron, attendants . . . . .          |             | 5             |
| Cost per individual . . . . .                  |             | 14 cents      |

The older children were permitted to help in setting the table for dinner and all in rotation assisted in waiting on table. The teacher and the matron presided and before the year was over, the table manners of the children showed remarkable improvement.

Every child is given a cold bath every morning. The bath usually lasts about ten seconds, after which the child is given a vigorous rub with a Turkish towel. As a usual thing, the children object to the baths at first, but in a very few days learn to like it and strange as it may seem, object to going without it. At the beginning of last year a general order was issued that in case it was found that a child did not react properly after a cold bath, the baths for this child were to be discontinued. There was not a single child, however, of the entire forty-nine, for whom it was necessary to discontinue the baths. Cold tub bathing is an entirely different proposition from a cold shower and is probably not suitable for the type of child who attends the open air school.



DINNER TIME



CONTRAST THE CRAMPED POSITION IN THE STEAMER CHAIR WITH THE



COMPLETE RELAXATION POSSIBLE ON THE COTS

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## Open Air Crusaders

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As there was no heat whatever in the outdoor school, it was necessary carefully to plan the clothing for the children. The three principal things considered were:

1. Sufficient protection.
2. Not too great weight.
3. Construction of clothing so as to permit activity.

An Eskimo suit made of heavy wool blanket seemed to answer the requirements. This suit, supplemented by a pair of farmer's felt boots and fleece-lined gauntlet gloves kept the children warm in the severest weather. The construction of the garments seemed to permit sufficient activity but there is room for improvement in the matter of weight. Garments constructed of a light woolen water-proofed material supplemented by paper lining may perhaps serve the purpose better than the woolen blanket. It is our plan for the year of 1910-1911 to experiment with various materials in order to find something which is light and durable and at the same time water-proof and a good non-conductor.

While resting, each child is provided with a double wool blanket and the additional protection of a sleeping-bag, made after the conventional pattern only of a smaller size. These bags are made of canvas, lined with rather heavy cotton blanket. Our new sleeping-bags may be made of paraffined canvas lined with paper and farmer's satin.

Great care is exercised to see that the children are made comfortable and as far as possible taught to go to sleep during the rest period. A new child for the first two or three days seldom sleeps, but the comfort and quiet soon develop the habit and taking an hour's nap soon comes as natural as eating lunch.

It was found that the ordinary steamer chair which has been used in so many outdoor schools and sanatoria was neither suitable for studying nor was it very comfortable to sleep in. So after trying the folding chair for a time, we changed to the regular school desk for the school room work and to folding canvas cots on which the children reclined for the rest period.

The play of the children is restricted as little as possible and when there is restriction it applies only to special children.

The gymnastics are limited to breathing and marching exercises.

Any child who at the morning inspection by the nurse is found to have a temperature of 100 or over, is kept lying down the entire day except at meal time.

Exclusion on account of any symptom of contagious disease is the same as in the regular public school.

The special building which is best fitted for open air work has not yet been determined. While regular school rooms have been arranged

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## Open Air Crusaders

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to meet the requirements for fresh air, a specially planned building would probably be more desirable. Any sort of structure, however, which permitted the admission of sufficient fresh air to make the condition practically the same as that outside would answer the purpose.

### THE DAILY PROGRAM

|                                                     |                |
|-----------------------------------------------------|----------------|
| Rise . . . . .                                      | 7:00           |
| Breakfast at home . . . . .                         | 7:15 to 7:45   |
| Arrive at school . . . . .                          | 8:00           |
| Temperature taken and inspection by nurse . . . . . | 8:00 to 8:30   |
| Bath and lunch . . . . .                            | 8:30 to 9:00   |
| In school . . . . .                                 | 9:00 to 10:15  |
| Recess . . . . .                                    | 10:15 to 10:30 |
| In school . . . . .                                 | 10:30 to 11:45 |
| Get ready for dinner . . . . .                      | 11:45 to 12:00 |
| Dinner . . . . .                                    | 12:00 to 12:45 |
| Section 1:                                          |                |
| Rest . . . . .                                      | 1:00 to 2:15   |
| In school . . . . .                                 | 2:15 to 3:15   |
| Section 2:                                          |                |
| In school . . . . .                                 | 1:00 to 2:15   |
| At rest . . . . .                                   | 2:15 to 3:15   |
| Play or gymnastics,                                 |                |
| Temperature and lunch . . . . .                     | 3:15 to 4:00   |
| Return home . . . . .                               | 4:00           |
| Supper at home . . . . .                            | 6:30           |
| To bed . . . . .                                    | 8:00           |

## Chapter Four

### Statistics

GENERAL FINANCIAL STATEMENT.— COST OF EQUIPMENT FOR ONE CHILD.  
— AGGREGATE POUNDS BELOW NORMAL.— TOTAL AGGREGATE GAIN.  
— BIRTHPLACE OF PARENTS.— AGES OF CHILDREN.— GRADES REPRESENTED.— FAMILY HISTORY.

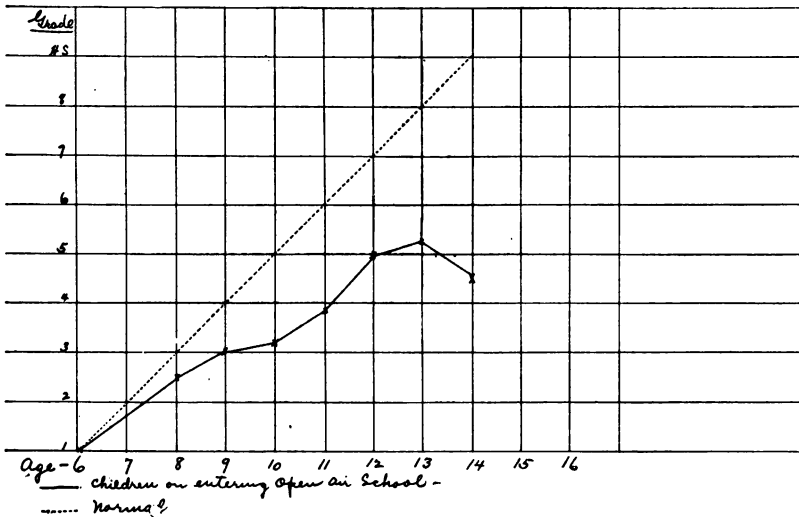


THE LAST LUNCH AT CAMP ALGONQUIN

# Statistics

## FINANCIAL STATEMENT

|                                             |                   |
|---------------------------------------------|-------------------|
| Clothing . . . . .                          | \$ 125.99         |
| Blankets . . . . .                          | 339.02            |
| Cots and chairs . . . . .                   | 68.13             |
| Lumber . . . . .                            | 74.93             |
| 16 glazed sashes in dormitory . . . . .     | 74.00             |
| 8 sashes in dormitory . . . . .             | 37.00             |
| Reversing doors. . . . .                    | 12.00             |
| Dishes . . . . .                            | 33.27             |
| Desk . . . . .                              | 10.00             |
| Gas, light, elevator service . . . . .      | 225.00            |
| Provisions . . . . .                        | 1,270.00          |
| Relief (rubbers, overcoats, etc.) . . . . . | 49.72             |
| Medicine . . . . .                          | 26.52             |
| Pictures . . . . .                          | 15.10             |
| Postage and carfare . . . . .               | 11.15             |
| Salaries of Attendants . . . . .            | 753.61            |
| Miscellaneous (small equipment) . . . . .   | 147.72            |
| <b>Total . . . . .</b>                      | <b>\$3,273.16</b> |



GRADE OF THE OPEN AIR SCHOOL PUPILS COMPARED WITH NORMAL PUPILS

## Open Air Crusaders

### COST OF MAINTENANCE

(Based on an Actual Cost of Handling an Average Attendance of Thirty-five Children.)

#### STAFF:

|                                            |                   |
|--------------------------------------------|-------------------|
| Teacher, furnished by School Board         |                   |
| Nurse, furnished by Tuberculosis Institute |                   |
| Physician, furnished by Nursery            |                   |
| Matron                                     | \$50.00 per month |
| Assistant Matron                           | 30.00 per month   |
| Cook                                       | 30.00 per month   |

#### Food (Cost per child):

|              |                                    |
|--------------|------------------------------------|
| Raw material | \$0.09 per day or \$1.80 per month |
| Milk         | .07 per day or 1.40 per month      |
| Gas          | .01 per day or .20 per month       |

|       |     |        |
|-------|-----|--------|
| Total | .17 | \$3.40 |
|-------|-----|--------|

#### SPECIAL EQUIPMENT FOR EACH CHILD:

|                                                 |        |
|-------------------------------------------------|--------|
| Eskimo suit                                     | \$3.50 |
| 1 double wool blanket                           | 6.50   |
| Canvas folding cot (special, 28 x 66 in.)       | 1.75   |
| Sleeping bag (canvas-lined, with cheap blanket) | 2.00   |
| Felt boots                                      | .60    |
| Gauntlet gloves, fleece-lined                   | .35    |
| Thermometer                                     | .25    |
| Tooth brush                                     | .10    |
| Paper napkins                                   | .10    |
| Record sheets                                   | .10    |
| Towels                                          | 1.00   |
| Laundry                                         | .50    |
| Miscellaneous disinfectants                     | .25    |

|       |  |         |
|-------|--|---------|
| Total |  | \$17.00 |
|-------|--|---------|

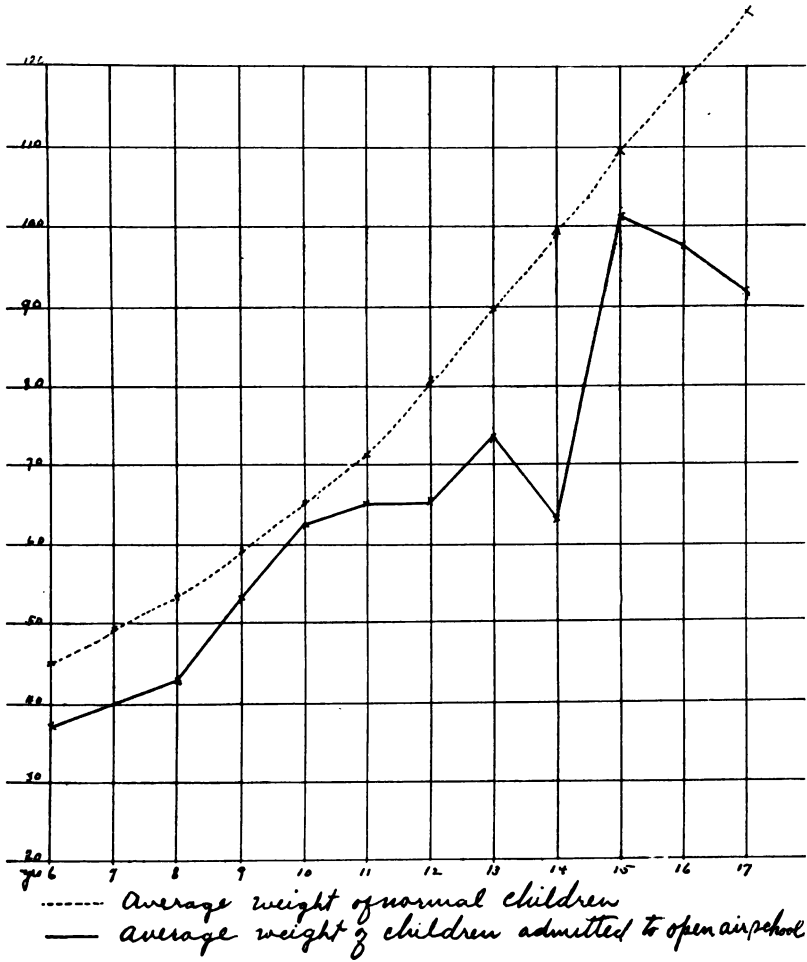
### AGGREGATE NUMBER OF POUNDS BELOW NORMAL OF 49 CHILDREN

| Age   | Number of Children | Average Pounds Below Normal | Aggregate Pounds Below Normal |
|-------|--------------------|-----------------------------|-------------------------------|
| 6     | 2                  | 8                           | 16                            |
| 8     | 2                  | 11                          | 22                            |
| 9     | 4                  | 6                           | 24                            |
| 10    | 8                  | 3                           | 24                            |
| 11    | 6                  | 7                           | 42                            |
| 12    | 10                 | 15                          | 150                           |
| 13    | 12                 | 16                          | 192                           |
| 14    | 2                  | 37                          | 74                            |
| 15    | 1                  | 9                           | 9                             |
| 16    | 1                  | 21                          | 21                            |
| 17    | 1                  | 35                          | 35                            |
| Total | 49                 | 168                         | 609                           |

609 pounds is equivalent to the aggregate weight of thirteen normal six-year-old children, or nine normal ten-year-old children. Total aggregate gain for 49 children, 178 pounds, or the equivalent of four normal six-year-old children. Greatest gain, 14 pounds in 17 weeks. Total aggregate number of days' care, 4,911.

## Open Air Crusaders

DIAGRAM SHOWING WEIGHT OF CHILDREN  
COMPARED WITH THE NORMAL



## Open Air Crusaders

### BIRTHPLACE OF PARENTS

|               |             |
|---------------|-------------|
| England       | 1           |
| France        | 1           |
| Poland        | 2           |
| Bohemia       | 3           |
| Roumania      | 3           |
| Italy         | 3           |
| Germany       | 4           |
| United States | 5 or 10.2%  |
| Russia        | 10 or 20.4% |
| Ireland       | 17 or 34.7% |

| Ages of Children |    | Grades Represented |    |
|------------------|----|--------------------|----|
| 6                | 2  | 1                  | 3  |
| 7                | 0  | 2                  | 7  |
| 8                | 2  | 3                  | 4  |
| 9                | 4  | 4                  | 12 |
| 10               | 8  | 5                  | 11 |
| 11               | 6  | 6                  | 5  |
| 12               | 10 | 7                  | 3  |
| 13               | 12 | 8                  | 1  |
| 14               | 2  | Special            | 3  |
| 15               | 1  |                    |    |
| 16               | 1  |                    |    |
| 17               | 1  |                    |    |
| <hr/>            |    | <hr/>              |    |
| 49               |    | 49                 |    |

### FAMILY HISTORY

|                               |    |
|-------------------------------|----|
| Negative                      | 18 |
| Father died from Tuberculosis | 12 |
| Mother has Tuberculosis       | 7  |
| Father has Tuberculosis       | 7  |
| Sister died from Tuberculosis | 3  |
| Brother has Tuberculosis      | 2  |
| <hr/>                         |    |
| 49                            |    |

Positive cases of tuberculosis in immediate family, 31, or 63.2%.

## Chapter Five

### Comment Aroused by the School

FROM THE CHICAGO TUBERCULOSIS INSTITUTE, DR. HENRY B. FAVILL, DR. THEODORE B. SACHS.—FROM THE MUNICIPAL SANITARIUM, SUPT. FRANK E. WING.—FROM THE CHICAGO MEDICAL SOCIETY, DR. JOHN A. ROBISON.—FROM THE CHICAGO PRESS, CHICAGO AMERICAN, DAILY NEWS, EVENING POST, EXAMINER, INTER-OCEAN, JOURNAL, RECORD-HERALD, TRIBUNE.



STUDYING UNDER THE OAKS OF CAMP ALGONQUIN

## Comment Aroused by the School

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FROM THE CHICAGO TUBERCULOSIS INSTITUTE

**The time is approaching when a school curriculum which has not hygiene as its central thought will be in discredit.** As usual this point is likely to be reached by dealing with exceptional and perplexing school conditions. The out-of-door school for tubercular children has been life-saving and a benediction to those children. It has been far more. It has shown the feasibility of giving every child what is its natural right, namely, an education under conditions which foster rather than stifle his physical perfection. Such demonstrations are inexpressibly valuable. They cannot be measured by money. No one can foretell the wave of influence which spreads from such a center.

HENRY B. FAVILL, M. D.,  
President Chicago Tuberculosis Institute.

We are in the midst of a gradual change of conception of our duty to the school child.

Schooling, under conditions impairing health, renders assimilation of knowledge difficult, at times impossible; hence the agitation for pure air in school rooms, a medical inspection service, a proper adjustment of hours of study and recreation, and a curriculum adapted to requirements and capacity of the growing child.

The large army of school children cannot be handled as a homogeneous mass. **Experience points to the differentiation of school methods with various groups of children as the only effective policy,** productive of desired results. The application of one system to all spells injury to many, while a modified policy, with special provision for physical well-being, renders the weak strong and makes assimilation of knowledge possible where otherwise progress is slow or nil.

The efficacy of such modified, properly adapted school methods is best exemplified in the modern treatment of the tuberculous school child. Where progress was impossible under the old conditions, the schooling in the open air, combined with the provision of a liberal diet and a proper adjustment of the hours of rest and study, restores health in a large number of cases and brings many a lagging child up to the average standard. The Outdoor School conducted by

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## Open Air Crusaders

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the Chicago Tuberculosis Institute in the summer of 1909, the Elizabeth McCormick Open Air School, carried through last winter by the United Charities and the Board of Education on the roof of the Mary Crane Nursery, as well as the open window room for normal school children in the Graham School, have demonstrated effectively the need of differentiation of methods in dealing with various groups of children.

The health of the school child is being rapidly recognized by school authorities as an important asset and the old policy of one method for all is rapidly passing into oblivion.

THEODORE B. SACHS.

Head of Sanitarium Department, Chicago Tuberculosis Institute.

### FROM THE MUNICIPAL SANITARIUM

**Some day the city will be judged a success or a failure by what it has been able to accomplish for those little ones who never had a chance.** The Elizabeth McCormick Open Air School took thirty-five such children from their poorly ventilated school rooms and their more poorly regulated homes, and with them demonstrated the practicability of the Open Air School regime as an all the year round possibility.

I know of no more convincing argument than that expressed in the report of the school physician and the teacher, showing:

Improved physical condition,

An average of four pounds gained in weight per child,

Two grades made where formerly advance was un hoped-for,

Mental dullness and stupidity replaced by alertness and desire to learn.

In fact they have been living in a new world and **it has given them their first fighting chance.**

FRANK E. WING,

Superintendent of the Chicago Municipal Tuberculosis Sanitarium and of the Tuberculosis Institute.

### FROM THE CHICAGO MEDICAL SOCIETY

I was delighted when I examined the pupils of the Outdoor School at Algonquin a few days ago and noted the improved physical condition of the children, their improved nutrition and their bright mentality. The records of the work done in the Elizabeth McCormick Open Air School during the past few months is an irrefutable argument in favor of the Board of Education extending this work, and including types of children who are not tuberculous, but suffer from some form of physical ailment which interferes with their harmonious physical and mental development.

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## Open Air Crusaders

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The city during school hours voluntarily assumes the function of parent, and it is its duty to place all its charges under the most sanitary and hygienic conditions, and look after their physical welfare as well as mental training. To my mind **there is no factor of so great importance in the training of school children as giving them an abundance of God's fresh air.** The most difficult architectural problem of all ages since man began to live in houses, and a problem which has never been satisfactorily solved, is ventilation. The best system is Nature's, the outdoor system. Let the public schools of the future be erected with the idea of utilizing the roof spaces for outdoor schools, and let the children, non-tuberculous as well as tuberculous, be taught there.

An educated intellect in a weak body is a waste of effort both as far as the individual and the commonwealth is concerned: the flower of the intellect withers and the world loses the fruit of a brilliant mind. Instead of concentrating our efforts on the training of the intellect, let us develop its seat in a strong, vigorous body, free from disease, and the world will be the gainer.

JOHN A. ROBISON,  
President Chicago Medical Society.

### FROM THE PRESS

The question of open air schools received the attention of Mrs. Ella Flagg Young, superintendent of schools, to-day.

She visited the Elizabeth McCormick Open Air Roof School Room and held a committee meeting there.

Physicians on the staff of the Mary Crane Nursery are enthusiastic over the results of the open air scheme. **The pupils themselves resent any motion of their being deprived of their "out-of-doors" school.**— *American* for December 13, 1910.

Mrs. Ella Flagg Young, superintendent of schools, visited the "school on a roof" at the Mary Crane Nursery to-day and after investigating the "school room" with its walls of woven wire and after hearing recitations and talking with the teacher, she heartily set the stamp of her approval upon the open air method of treating tubercular children.

A conference of well-known physicians and others interested in the experiment followed Mrs. Young's visit. **It is thought that "schools on roofs" may be opened on various school buildings throughout the city.**— *Daily News* for December 13, 1910.

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## Open Air Crusaders

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We have sometimes wondered if there was any exercise of the mind more purely speculative than the attempts to work out mechanical systems of ventilation. Given a hall or a public building, the problem is to trace a steady stream of graceful flowing arrows from the outside air through the place, including all the nooks and corners, and out again.

The more graceful and enterprising the arrows, the better the system. A really good diagrammatic arrow has imagination, indignation, a sense of duty. It gets inside the room or hall, and looks around and sees a lot of lowering carbon dioxide in a corner and sweeps straight at it. "Out with you" says the ventilating arrow. "These precincts are mine." And straightway it prods the villainous carbon dioxide into a ventilating shaft and cleans and sweetens the room.

Every architect has his quiver full of these arrows, but very few of his clients ever succeed in getting a glimpse of them. Sometimes, it may be, it is their own fault. They don't meet the architect and his arrows halfway. They complain of drafts down the back of their necks or around their feet. And in the case of most public halls and school rooms the carbon dioxide gets so heavy and inert that it takes complete possession of the place and the fresh air arrows scarcely get a peep within.

The public schools have long been the victim of the mechanical ventilating system. It may be true, as a contemporary has suggested, that the popular feature of the system with former boards of education was the saving of coal which it made possible. But its popularity was also due to ignorance, the ignorance of parents as well as of the board. It has taken years of "fresh air" preaching to teach parents that the open window is really the foe of pneumonia.

The meeting of the board of education last night at which physicians and others discussed the remarkable records made in a year of experiment in certain schools will lead, we hope, to a relaxation of the old closed-window rules, and **every school ought to have its open-window room where those who need the hygiene of fresh air and whose parents approve may grow rosy-cheeked and sparkling.**

*The Chicago Evening Post* for October 22, 1910.

So pleased was Superintendent Ella Young with what she saw yesterday at the "school on the roof" of the Mary Crane Nursery, 818 Ewing Street, that she hopes to make **similar schools a regular feature of the public educational system of Chicago** and thereby combat, perhaps overcome, tuberculosis among children.

Mrs. Young was accompanied to the "school on the roof" by several physicians. She went to investigate reports that the chil-



Mrs. ELLA FLAGG YOUNG INSPECTING SCHOOL

## How the Papers Helped



A FEW OF OUR PRESS CLIPPINGS

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## Open Air Crusaders

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dren were suffering from the cold. She found the reports unfounded.

The children, all of them either with tubercular tendencies or suffering from throat troubles of a less serious nature, but sufficient to affect their general health and retard their school progress, were enthusiastic over the open air school and opposed to returning to closed and heated rooms.—*Chicago Examiner* for December 14, 1909.

Not only fresh air but cold air in every school in Chicago is now the cry by both Superintendent Ella Flagg Young and the health department.

Following the recent publicity given the open air school maintained on the roof of the Mary Crane Nursery and the "fresh air class" being tried out at the Graham School, Mrs. Young has announced that school rooms are at present too warm.

Sixty-eight or seventy degrees is too warm, not only for study and clear thinking, but for health, she declares.

Enthusiastic endorsement of the fresh air idea by all was the result of the trip. **It has been proposed that at least one room in every school building in the city be used as a "cold storage plant" class room.** Later more will be added.—*Inter Ocean* for December 14, 1909.

Experiments at the Elizabeth McCormick Open Air School and Graham School have established the desirability of a considerably increased allowance of fresh air in school rooms.

Prevalence of catarrh and throat troubles among city dwellers is largely due to foul air superheated and dried by steam radiators; therefore there is not the least need for surprise that children suffering from these affections should have improved rapidly under the fresh air treatment.

Where fifty or sixty children are crowded into one room the air very quickly becomes poisonous, they become listless because the impure air does not supply sufficient oxygen to purify their blood and they suffer bodily and mentally.

The *Journal* is glad to know that the value of fresh air as a builder of health and a curative agent is to be officially recognized by strict regulation of ventilation and temperature in the Chicago schools.

The children will benefit enormously. **The parents will profit by the fresh air principles which the children will introduce into their homes.**

And the reduction in tuberculosis within a few years will be astonishing. — *Journal* for December 14, 1909.

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## Open Air Crusaders

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How many children, real, live American "kids," do you know who wouldn't take a vacation from school when they could have it?

Not many, probably. The story of **thirty children who liked school so well that they made the teacher keep it open during Christmas week last year** when all the other "kids" in Chicago were enjoying a week's respite from study, is told in an attractive little pamphlet that thousands of Chicagoans will receive to-day, detailing the work of the United Charities of Chicago for the past year.

The school is one of the winter activities of the United Charities and is on the roof of the Mary Crane Nursery, near Hull House. It cares for children who are inclined to tuberculosis.—*Chicago Record-Herald* for June 24, 1910.

There are not two sides to the question raised in our school management: Shall the school room be ventilated in accordance with modern sanitary principles?

No one who has gone to school will forget the neglect of ventilation. No intelligent person will doubt the evil effects of bad air.

Disease is one of the effects, and the worst. But it is not the only effect. Beside acute diseases and contagion, and the slow undermining of the child's strength, is the loss of his mental efficiency.

**No child poisoned with bad air can learn rapidly or well.**

In the saving of life and health, and in the increase of educational results, proper ventilation is a measure of common humanity and immediate practical economy.

No time should be lost in bringing about this betterment.

*Chicago Tribune*, for October 23, 1910.

## Chapter Six

### Chicago's First Open Air School

DR. KOHN, OF BOARD OF EDUCATION, PLANS SCHOOL FOR DEBILITATED CHILDREN.—CHICAGO TUBERCULOSIS INSTITUTE PLANS SCHOOL FOR TUBERCULOUS CHILDREN.—CO-OPERATION OF BOARD OF EDUCATION SECURED.—SCHOOL OPENED AUGUST THIRD.—DAILY PROGRAM.—DIET DIFFICULTIES SUGGEST NEED OF HOME INSTRUCTION.—THE TOOTHBRUSH DRILL.—THE REST PERIOD.—PHYSICAL CONDITION OF CHILDREN ADMITTED.—RESULTS OF FIRST YEAR'S WORK.—SECOND SUMMER SEES THREE SCHOOLS STARTED.—CHICAGO PUBLIC SCHOOL EXTENSION COMMITTEE PROVIDES FOOD AND EXTRA EQUIPMENT.—FOURTEEN NATIONALITIES REPRESENTED.—RESULTS.—4,700 TUBERCULOUS CHILDREN IN CHICAGO NEED OPEN AIR SCHOOLING.—CITY SHOULD PROVIDE FOR THEM.

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## Open Air Crusaders

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THE TUBERCULOSIS INSTITUTE HELD ITS SCHOOLS IN TENTS  
ERECTED IN SCHOOL YARDS



A CLASS IN BASKETRY—SUMMER OF 1910

## Chicago's First Open Air School

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Chicago's first outdoor school for tuberculous children was made possible through the joint co-operation of the Board of Education and the Chicago Tuberculosis Institute. The part taken by the Board of Education was largely the result of the active interest of Dr. Alfred Kohn, who, prior to the arrangement with the Tuberculosis Institute, had presented to the Board of Education a plan for a similar school for debilitated children, not necessarily tuberculous, to be modeled somewhat after the Charlottenburg School in Germany near Berlin. Provision for the feeding of the children, however, not being forthcoming, it became necessary to give up the school as originally planned. Prior to the announcement of these plans, the Chicago Tuberculosis Institute, which at the beginning of the year had advocated an Outdoor School as one of its possible summer activities, was in the field for a location on which to establish some form of outdoor provision for a group of tuberculous children; either a day and night camp in the country, or a day camp inside the city limits.

The plan of Dr. Kohn seemed to present the desired opportunity; consequently the Tuberculosis Institute offered to co-operate with the Board of Education in the maintenance of such a school. The offer was accepted, and after some necessary delay the school was opened on the grounds of the Harvard School at 75th Street and Vincennes Road on Tuesday morning, August 3, 1909.

According to the arrangement, the school building, grounds, equipment, and teaching staff were furnished by the School Board, while the selection of the children, food supply, transportation, cook, nurse and medical service were assumed by the Tuberculosis Institute. A large shelter tent and thirty reclining chairs were secured for outdoor use; and a range, cooking utensils, dishes, knives, forks and spoons, kitchen and dining tables and ice box were installed in the basement of the school building. The large assembly hall, piano, toilets and shower baths were also placed at the disposal of the pupils. Mr. William E. Watt, principal of the Graham School, was secured as principal of the out-door school and he was assisted by two teachers also supplied by the Board of Education.

The Tuberculosis Institute placed one of its nurses on half-time attendance at the school to watch the temperatures, weight, pulse, and general condition of the pupils. Careful follow-up work into the

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## Open Air Crusaders

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homes of the children made it possible to secure the co-operation of the parents to the fullest degree in order to prevent the undoing in the home at night of whatever gains the children might make at the school during the day.

While it was called an "Outdoor School," the greater part of the daily program was devoted to what might be called vacation rather than school activities, with a generous allowance of rest and sleep. In order to give the children the benefit of as long a day as possible they were at first allowed to come as early as they chose. On the second morning one boy was there at six o'clock, and many more before seven-thirty; but by the time a working schedule had been adopted it was found that eight-thirty was as early as the majority of children could get there and that hour was therefore settled on as the time for arrival.

On reaching the school, the children's first duty was to give their faces and hands a thorough washing. Breakfast was served at nine o'clock in the school basement. This consisted of a well-cooked cereal or shredded wheat, eggs in some form, bread, butter, milk, and often some kind of fruit. At first liberal amounts of cream were given with the breakfast food, but experience soon showed that too much cream was unpopular. It was a new article of diet. The children did not like it and in this as well as in other articles of diet it was found that the simple foods, well-cooked and nutritious, such as had come under their home range of experience were more acceptable than a more fastidiously worked out bill of fare. As one of the visitors to the school remarked: "Give them corn beef and cabbage and they will fall to with a relish; but chicken croquettes and combination salad are quite beyond their powers of comprehension." It is the almost universal experience of the visiting nurses that the children from the type of home represented in the outdoor school as conducted in Chicago are fed on a limited diet of bread, coffee, potatoes, fried meats and cheap delicatessen products. Certain nationalities have a leaning toward dried fish, macaroni, canned tomatoes and corn, and hard boiled eggs, but almost invariably they refuse cooked cereals, especially rice, vegetables other than those mentioned, soup, unless of the coarsest variety, and numerous dishes common in the average American home. Classes in domestic science and food values, as well as in deep breathing and air values would do much to help this state of affairs, for mal-nutrition is frequently the forerunner of tuberculosis in children.

Each child was provided with a good toothbrush and was taught how to use it. A row of hooks with the names pasted above gave each youngster a sense of proprietorship and it was interesting to watch the pride and importance which, three times a day, attended the

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## Open Air Crusaders

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performance of this seemingly trivial duty. At the close of the experiment the children were presented with their toothbrushes as a reward of merit.

The first half of the morning was devoted to whatever purely class work was done for the day. The children repaired to the tent



THE TOOTHBRUSH DRILL

outside and after establishing themselves in their reclining chairs, spent an hour and a quarter in singing, story-telling, listening to talks on nature, national history, patriotic biography, morals and manners, or in reading, geography, number work or some other kindred employment, the program being varied from day to day

At ten-forty-five a forenoon refreshment of milk or egg-nog was served. At first raw eggs were tried, but after one boy exploded with: "Aw, I know what that is. I've had lots of that at home. It ain't no good," thereby nearly precipitating a revolt, various devices were practiced to disguise the taste of the egg, with good results.

At eleven o'clock the children were divided into two groups, the girls going to the shower baths and the boys taken singly or in small groups for reading, individual instruction in subjects in which they were behind, or for gardening, raffia work and other forms of employment.

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## Open Air Crusaders

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The hour between eleven-thirty and dinner time was spent by all in such exercises as light gymnastic dancing, singing, breathing, marching and dramatizing. Dinner was made the heavy meal of the day, usually consisting of meat or fish, potato, and one other vegetable, followed by pudding, fruits, cookies or some other sweets.

Then followed a two-hour rest period in the reclining chairs — a period of complete relaxation and, as far as possible, a period of sleep. At first many of the children were unable to sleep, but in a few days a remarkable change had been accomplished. One boy who had been restless and fidgety for the whole period during the first two days, slept a little on the third day, and on the fourth was sleeping so soundly that his chair was picked up bodily and moved from the sun into the shade without awakening him. Many were able to sleep for the entire two hours, while all enjoyed a considerable period of sleep.

Then at three o'clock came the mid-afternoon refreshment of milk or egg-nog, followed by a fifteen-minute period of repose preparatory to the taking of temperatures, pulse, etc., by the nurse, who also watched carefully other matters relating to the physical condition, reporting irregularities to the doctor whenever necessary.

The hour from four to five was a reversal of the late morning hour, during which the boys were sent to the shower baths and the girls engaged in construction work and in individual instruction. At five o'clock supper was served, consisting of bread and butter, scrambled eggs, or some other proteid-containing food, custards or stewed fruit. At five-thirty all assembled in front of the school building, car-tickets for use the next day were distributed, good nights were said, and all took the car together under the care of the nurse.

Of the thirty children chosen for the experiment, seventeen were first-stage cases of tuberculosis, two had tubercular glands, and eleven were pronounced pre-tubercular. Sixteen had been and ten were still directly exposed to tuberculosis in their homes, while in the case of the other fourteen there was no evidence of direct exposure. None had passed to the "open," infectious stage, all such cases being excluded, but two-thirds of them showed a temperature ranging from 99 to 100.2 on admission.

On discharge, only two showed a temperature above 99, while the rest were practically normal. The total gain in weight for the thirty children was 113 pounds, the range being from one to seven pounds. Twenty-two gained three pounds or more each, while the average gain was 3.8 pounds. One little girl whose life had been a burden because of tuberculous cervical glands, and who, although thirteen years old, was only in the fourth grade, joyfully reported

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## Open Air Crusaders

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in June, 1910, that she had made two grades and that her neck had hardly bothered her at all. Her mother had brought her to the school when the papers announced its opening in 1909, and when the Institute nurse later visited the child's home, she found clean rooms and plenty of good simple food, but no fresh air. A cot was taken from the stuffy little bedroom and placed on the porch; milk was substituted for the tea and coffee; and school and home worked together to give this child a new start. She has profited by it to a surprising extent, although she still weighs twenty-nine pounds less than the normal girl at her age. Her brother died of tuberculosis.

So gratifying were the results of the one month of the school, followed as it was during the winter by the work of the Elizabeth McCormick Open Air School and the Graham School, that in the summer of 1910 the Chicago Public School Extension Committee, which is formed of representatives from ninety women's clubs in Cook County, united with the Board of Education and the Tuberculosis Institute in opening at the Lake View, William Penn and Libby schools, three schools similar to the one of the preceding summer. The general management and routine were the same, except that the Chicago Public School Extension Committee, under the able chairmanship of Mrs. A. W. Bryant, met all expenses of food and extra equipment for the 1910 schools and also employed a trained dietitian to supervise the meals.

The one hundred children in attendance, representing fifty-two schools, public and parochial, made a net increase of 230 pounds in weight, an average of 3.5 pounds, and fourteen nationalities, American, Irish, Norwegian, Swedish, German, Russian, Belgian, Hungarian, Italian, Polish, Bohemian, Canadian, French, and English, bore the gospel of fresh air into every part of Chicago.

However, the children came largely from the poorer sections of the city. One boy came from a little six-room cottage which his father was trying to buy, although it was not much more than a roof, set on badly constructed walls. The father was a laborer, in the incipient stage of tuberculosis. There were eight children, the oldest a wayward boy of fifteen. Given an income of \$13.00, a family of ten with two cases of tuberculosis in it and a home to pay for, what will be the results for the seven younger children if the school does not come to the rescue?

What will be the results for all the other children in the city who need a care which their parents cannot give, if the school does not come to the rescue? Applying the percentage of tubercular infection which Stockholm, Sweden, found in children under fifteen, there are 4,700 tuberculous children in Chicago. Boston found nearly five per cent of her children of school age in an anaemic or weakened

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## Open Air Crusaders

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condition which predisposed them to disease and made them proper candidates for open air schooling. This would mean 14,600 such children in Chicago and would necessitate at least eighty-five or a hundred open air schools. Expensive? Yes, but economy in the

NOT THE  
SCHOOL CHILD



BUT A SCHOOL  
CONDITION

IN THE BALANCE

end. A state which spends every year \$1,187,000 in educating children who die of tuberculosis before reaching their twentieth year can well pause to consider the money value of preventive work. A city must look to the well-being of her future citizens. No private organization, supported by private funds, can hope to do more than point out the way in which the city must follow if these children are to be given their fighting chance.

## Chapter Seven

### Chicago's Open Window School

TWO OPEN WINDOW ROOMS FOR NORMAL PUPILS IN SEPTEMBER, 1909.—SEVEN ROOMS BY JUNE.—TWENTY ROOMS IN 1910.—COLD AIR ROOMS DEMAND MORE FREQUENT EXERCISE.—CHILDREN RETAIN ORDINARY WRAPS.—WARMING ROOMS PROVIDED SELDOM USED.—TEMPERATURE FOR 1910 BETWEEN 50° AND 60°.—COLD AIR REDUCES DISCIPLINE BY REMOVING PHYSICAL CAUSES FOR MISCONDUCT.—COLD AIR BETTER FOR EYES.—WRITING PERIOD NOT HINDERED BY COLD.—NEED OF HUMIDIFYING AIR NOT REALIZED.—HOW THE GRAHAM SCHOOL HUMIDIFIES.—SAVING IN COAL BILL.—HOW THE GRAHAM SCHOOL MAKES ITS RECESS PERIODS VALUABLE.—GETTING TIRED PHYSICALLY IN THE OPEN AIR MAKES CHILDREN STRONG.—FRESH AIR DOUBLES POWERS OF TEACHERS AND PUPILS.



OPEN WINDOWS IN JANUARY



FRESH AIR FIENDS OF THE GRAHAM SCHOOL

## Chicago's Open Window School

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In September, 1909, two rooms were opened in the Graham School to show what natural cold air will do for normal pupils. No selection of individuals was made except that as children entered the school for their first year's work they were given their choice of entering a cold room or a warm one. Of course some pains were taken to inform the parents in advance as to what it was expected the cold air would do. After several weeks of trial in which zero weather was encountered and no bad effects followed, teachers, parents and pupils, seeing what had been done for those in the two rooms, asked for rooms in the other grades for the same sort of work. The school year closed with seven open rooms.

So satisfactory was the work that the school opened in September, 1910, with twenty cold rooms, merely retaining enough of the warm air rooms to insure a place in a warm room in every grade for pupils whose parents desired them to have it and also a place for teachers to work in warm air in case some of them feared that work in a cold room might prove too strenuous. The Board of Education also constructed two canvas-sided rooms on a roof of the Graham School to give the matter a more definite trial and to gather the results of the work of normal pupils in open air. The rooms may be duplicated anywhere for six hundred dollars each. They were completed too late in the spring for any tests to be made in them.

The work in a cold room differs from that in a warm room. The pupils are exercised far more frequently and in the low grades the seats are removed so as to provide wide floor space for games and dancing. Common wooden chairs or kindergarten chairs take the place of seats and long tables of simple construction replace the old form of rigid desks. The children sit in the school room clad in the clothing which protects them on the way to school. They keep all that clothing on, if they choose, or lay aside their caps, mittens, overshoes and coats if they feel uncomfortable with them on. During the year no money was paid out for any sort of clothing to protect the children from cold, as it was found that whatever clothing would bring them safely to school was more than enough for protection in the school where games were frequent. In one instance when the weather outside was about zero, the principal went into a room to see whether he could find any children who ought to be given warmer

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## Open Air Crusaders

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quarters. He found six boys with their overcoats off. As he approached them without saying anything about his intentions, he was met by the stout assertion of one of them who had read his mind: "No, Mr. Watt, we don't want 'em. We're not cold."

Of course the weather outside is much rougher than it can be in the school room for we do not permit boisterous winds to enter and some heat will get in from the corridors no matter how careful one is to exclude it. At all times we had places where the children might go to warm themselves if they chose. But such places were not used except by three of four from a room and by them not four times each during the entire winter.

As the school is a public one and public opinion has to be cared for, arrangements have been perfected for the year 1910-1911 to provide a current of warmed humidified outdoor air for each room so as to reduce the rigor of wintry weather and give the room a temperature of between 40° and 50° in winter, preventing it from going so low as to alarm anyone. While it is the opinion of the principal that such air is not so good for the children as unwarmed air, he has conceded a point to doubters and has it understood that a cold room is somewhat warmed and is not so severe as outdoor air. He believes the time will come when parents will demand what many in the neighborhood of the Graham school desire, air for school without any heat at all supplied even in the most severe weather but warming rooms provided for emergencies.

Children play out of doors in winter without discomfort in the worst weather. If sheltered and kept from the dampness of melting snow, they are able to do the work of the school in equally cold weather with equally good results.

Fresh cold air cures diseases, increases the vitality of teachers and pupils and makes all more alert intellectually. Hot, dry air makes catarrh, grip, pneumonia and all the foul air diseases. It is peculiarly adapted to developing and spreading tuberculosis. Cold air checks and cures it.

Teachers in cold air rooms close their day's work feeling fresh and well. Those in hot, dry rooms close the day often in a state of collapse. Children taught in fresh air learn with avidity and directly. They do not require the perpetual reviews and drills so common in our hot, dry schools. They are happier and grow more rapidly in cold air. The discipline of a school is reduced to a simple problem when the air is right. Merely humidifying the air in the Graham school and lowering the temperature of all rooms from seven to ten degrees lowered the number of cases of office discipline eighty per cent. It removed the sources of ordinary friction between pupils and between them and their teachers. A cool, humid air is soothing to the

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## Open Air Crusaders

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nervous system. We feel better and hence act better in right air.

After eight weeks of cold air work in the two rooms first opened for the demonstration, the school physician found that the nasal discharge which is very common in all primary schools in cold weather was entirely absent in the two rooms open to the fresh air. One child with catarrh was found in each room but both had been out of school and returned the day of the inspection. He found in two similar rooms where the air breathed was like that supplied in the very best schools of Chicago and other progressive cities that over forty per cent of the pupils had nasal discharge, although his examination was held before the severest weather had been experienced.

Some of the most common objections urged by those who inquire about the Graham school are that the child's eyes are hurt by the light of an open air room and that it is impossible to do the written work required in school if we have the air cold. It is quite as easy to protect the eyes in the open air room as in the ordinary room. Common sense takes care of that. But the objectors do not seem to realize that the deadly hot dry air of the ordinary school assails the eyes grievously and much of our eye trouble comes from living in air which causes a rapid evaporation of mucous secretions and causes the eyes to dry up and smart so that disease finds a ready entrance in the weakened organ. More eyes are destroyed, probably, by hot dry air, such as is common in schools in cold weather than could be destroyed by the most foolish use of all the light available in an open room in this climate where the winter sunlight is not particularly trying.

Those who fear that the written work of the schools must suffer because children in mittens cannot use the pen, find relief when they see that the pen is not used at all in the first grade, where the greatest number of children are. It is used very little in the second grade. But the cold air work does not seriously hinder the children in using pens. The ink has never frozen in one of our open air school rooms. The plants in the kindergarten, the only open air kindergarten in the world last year, did not get a touch of frost during the winter. This shows that the room was not very frigid. It was rare that we could get the temperature low enough to make it worth while to look at the thermometer for a record. The house is warm, the corridors throw in heat at every open door and the bodies of the children are healthy little furnaces supplying a great amount of heat: all contribute to keep the temperature from running down to where it gets in the barn in the country where children delight to play, no matter what the weather may be.

Hot dry air is common in schools. It is not dry because water has been taken out of it, but because when its temperature is raised

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it expands and its capacity for moisture increases. Few ventilating engineers seem to realize the necessity for supplying this needed moisture, although every textbook on school management or warming and ventilating states positively that humidity must be supplied to warmed air to make it fit to breathe. Yet millions of school children are obliged to sit in the deadening and dessicating air of ventilating and warming systems in which not a grain of moisture is supplied.

Whoever has lived in hot dry air long enough demands a temperature of  $80^{\circ}$ . Those younger and less dessicated like  $75^{\circ}$ . Others less devitalized are comfortable in dry  $70^{\circ}$ , but the majority of school rooms in winter get mysteriously above  $70^{\circ}$ , the maximum fixed by boards of education. A proposal last year to reduce the maximum to  $68^{\circ}$  was planned with great anticipation of opposition from many quarters and finally dropped. A temperature of  $70^{\circ}$  F. is too great, but it is so near the average degree of heat demanded by weakened persons in dry air that it was with difficulty that Boston established  $68^{\circ}$  as a maximum. There are many old teachers who demand and get  $80^{\circ}$  for their class rooms and the children have to begin life where these elderly and devitalized persons are leaving off.

The Graham school has a jet of steam thrown into each tempered air chamber. It is so distributed by a mechanical device that it gets equally into the air of all parts of the chamber and consequently into the rooms which are not open rooms. This steam is supplied so that the windows in winter are heavily frosted and in cold weather are steamed. A school room is not fit for use if its air is warm and its windows dry. A washday appearance indicates sanitary conditions.

There is no danger of overdoing the matter, for when, if ever, there should appear a slight gathering of dampness on any wall, shutting off the steam supply for a few seconds will cause it to vanish, so thirsty is the air that is warmed and not supplied with water.

Humidified air is comfortable at from eight to ten degrees less than dry air. This means a saving of about twenty-five per cent of the coal bill for warming. It means also a consumption of some coal for supplying the steam jets, so about twenty per cent of the coal bill may be saved in any school in a cold climate by supplying humidity during the severe weather when fires are required.

What our saving of coal may be when we have many open rooms and the rest humidified is a problem to be worked out during the coming cold season. But whatever may be the saving in coal it is a bagatelle when compared with the waste of money and time in trying to teach children in hot dry air. Considering the sickness prevented by right air and the lives actually lost by the weakening effects of hot dry air applied to the growing child, there is no way of estimating

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## Open Air Crusaders

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THE FIRST OPEN AIR KINDERGARTEN

the imperative need of making the supply of air in our schools right in every respect.

The open air room necessitates more frequent exercise during school hours. It also leads to the better supervision of the recess periods. The recess periods of ordinary schools are frequently times of rude conduct, obscene communication, physical harm through accident and through breathing the hot air of dusty basements, and idle waiting for the bell to ring. They ought to be made the most valuable portion of the school time. They should give relief from application to books and papers and stimulate the circulation of blood so as to make all the work of the school more effective. One observer has counted the number of children actually playing active games at recess in a school of over one thousand children and found the number painfully small. In one instance there were but seven boys playing in a space a block in length and no girls at all were playing. Some were leaning against the building and others were walking about with arms interlocked and seemingly no inclination to play. There were several hundred in the group and the time was recess, a time supposed to be used for play.

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## Open Air Crusaders

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One great reason why city children do not play as freely as our large schools at recess, is that any game started by the more enterprising ones is likely to be broken up and the materials confiscated by the idle ones who are stronger. Another reason is that children generally are weaker and less likely to take the initiative than children of rural districts or of the old schools of a generation ago when the ventilation was from open windows.

At the Graham school the recesses are divided into two equal periods and but one-fourth of the school occupies the yard at a time. Small children are allotted suitable space and only one or two rooms of the same grade are on the grounds at once. The teachers keep their own pupils together and organize the play. It is regarded as a regular part of the teacher's work to see that her children have a good time and are not interfered with by the others. She leads them to the grounds and at a given signal all disperse to visit the basements. They hurry back to begin the game agreed upon. In some instances the sexes divide for games and in other instances two rooms of about the same grade unite for a large game. A small book of the most successful games is being compiled. Teachers and pupils enjoy the period equally.

Getting tired physically in the open air and having a period of rest immediately afterward is a sure way to become strong. This has been explained to the children and they are as desirous of becoming strong as of learning. In fact, appearances indicate that they are more so. They are told that getting quite tired once a day makes them strong if it is done in the open air. Becoming strong means getting well or avoiding sickness. Being well and strong means good growth. It also means mental acuteness. The best minds are not always in the strongest bodies, but a good mind can do a great deal better work when the body is strong and well.

Fresh air work, both outdoors and inside, doubles the teacher's power and the results in the pupils. By breathing Nature's air, by dressing warmly, by taking much exercise, in school and out, the child is kept so much more alive than the ordinary school child that the mental and physical results are surprisingly good. So we have open air rooms to build up vitality and to fit pupils to learn. We make it possible for them to desire learning earnestly and to get it joyfully.

## Chapter Eight

### Ventilation of School Rooms

COLD WEATHER MEANS POOR VENTILATION.—NO PERFECT SYSTEM OF VENTILATION HAS YET BEEN DEvised.—A PERFECT SYSTEM WOULD INSURE CLEAN, MOIST AIR, OF UNIFORM TEMPERATURE.—DIFFICULTIES OF SECURING GOOD VENTILATION, WINDOWS, WALLS, RADIATORS, LEAKAGE.—INSTEAD OF PREVENTING DRAFTS, MAKE DRAFTS COMFORTABLE BY KEEPING AIR IN MOTION AND HUMIDIFYING IT.—COMFORT OF AIR DEPENDS ON THE PERSON.—HEALTH DEMANDS THAT EXPIRED AIR BE BLOWN OUT OF BREATHING ZONE.—IDEAL SYSTEM IS UPWARD VENTILATION, WITH HEATING APPARATUS SEPARATE, HUMIDITY SUPPLIED, AND EASILY OPERABLE CUT-OFFS.—GOOD STANDARDS OF SCHOOL VENTILATION DEMAND: TEMPERATURE 60° TO 65° F.; HUMIDITY 60; CO<sub>2</sub> 6 OR 7 PER 100,000; 4,000 CUBIC FEET OF AIR PER PUPIL, IF OUTSIDE AIR IS MIXED WITH EXPIRED AIR, 1,000 IF UNMIXED; ROOMS AIRED THREE TIMES A DAY; VACUUM CLEANING; ROOMS NOT WIDER THAN TWICE HEIGHT OF WINDOW FROM FLOOR.—NEED OF COMPULSORY STATE VENTILATION LAWS.—FOURTEEN BASIC PRINCIPLES OF VENTILATION SUBMITTED BY COMMISSION APPOINTED BY AMERICAN SOCIETY OF VENTILATING AND HEATING ENGINEERS, CHICAGO PUBLIC SCHOOLS AND CHICAGO HEALTH DEPARTMENT.



AT CAMP ALGONQUIN — A SCHOOLROOM WHERE THE VENTILATION AFFORDS NO DIFFICULTIES

## Ventilation of School Rooms

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School children need well ventilated school rooms. Ventilating conditions are all right in the late spring, the early summer and the early fall. Conditions are all wrong in the late fall, the winter and the early spring.

As the weather gets cold, the fires are started, the windows come down, the storm windows and doors are put in and the harm begins. The old, stove-heated school room was very trying. The newer ventilation methods are efforts to improve conditions.

A perfect system of ventilation is, as yet, only a matter of theory. However, with the wealth of brains and intelligence now being exercised among physicians and ventilating engineers, it is confidently hoped and expected that a practically perfect system may be produced.

A perfect system of ventilation should, without unpleasant drafts, provide fresh air to each person, and remove immediately all air which has been exhaled without mixing the two or contaminating the former. A perfect system should insure that the fresh air be clean, properly moist and at a uniform temperature. With such a system the volume of air necessary for each occupant would be only equal to the amount of air exhaled in an hour, a volume almost infinitesimal compared with the amount of air ordinarily pumped into an average Chicago school room.

Physical conditions have rendered the construction of an ideal ventilating system very difficult and very expensive. For instance, every window presents a cooling surface, which, contracting the air that lies against it causes it to fall, setting up local currents which mix the breathed and unbreathed air. Every cool wall likewise creates this current. Every radiator or pipe, with its hot surface, expands the adjacent air, causing it to rise and mix.

Warm, fresh air entering a cooler room rises to the ceiling. Cool, fresh air falls to the floor. Warm, exhaled, foul air rises, and is apparently raised, lowered, and diffused by the various heating and cooling agencies just as is fresh air. Then there is leakage, which affects an ordinary school room tremendously. On the windowed side enough air often comes through the walls and cracks and around the window sashes of a well built room to change the entire volume of air in ten minutes. On the leeward side eddies form suction areas which cause a like volume of warm, often fresh, air to leak out.

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## Open Air Crusaders

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These considerations have, up to this time, caused nearly all ventilating schemes to be designed on the "dilution" principle. Sometimes the heating is done by raising the air delivered for ventilating purposes sufficiently above the temperature desired in the rooms to maintain that temperature there without any direct heat in the rooms. Again the air is heated only to the room temperature desired and the room is warmed by heaters located in the room. Both schemes are objectionable, inefficient and expensive, because of the large volumes of air which must be handled to secure reasonable results on the dilution principle.

Leakage through walls and around windows is a very serious factor with either system and even though a pressure be maintained in the building above that of the atmosphere outside, so much lighter and more elastic is the artificially warmed air inside that the cold, heavy, outside air with even a breeze pressure enters the rooms in streams.

When air is increased in temperature by the ordinary heating apparatus it is decreased in moisture. Where, say, 70 per cent humidity is common at a 68° temperature in summer and seems to be most advantageous to human development, such a humidity is never in force in an artificially heated room unless special apparatus to create it is provided. It is probably safe to say that not more than 2 per cent of the public schools in the United States have any humidifying apparatus. The air having been heated to about 100° and cooled to about 70° before it reaches the pupils, is superdried and seeks to obtain its proper balance of moisture, hence dust, dry throats, parched lips and a rapid rate of skin evaporation, rendering it necessary to maintain a high temperature for comfort.

It is our opinion that ventilating engineers have wasted much effort in trying to prevent currents or drafts of air. On the other hand, they have not expended enough effort on making drafts or currents comfortable.

In considering the comfort from air several factors must be taken into consideration. The body heats the air which is in contact with it to about 90° F. The skin surface of the body is about 5° F. higher than this. The heat mechanism of all bodies older than the early stages of infant life is so adjusted that provision is made for loss of heat and moisture by the skin. Such loss must go on at all times, else there is discomfort.

When the temperature of the air is below 60° F. the loss is so great that we cover the body with extra layers of low conducting, partially impervious cloth to hold the warm, moist air next the skin under the clothes. When the temperature mounts above 70° F. we remove some of this cloth and change the remainder to cloth of an

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## Open Air Crusaders

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open texture and greater conductivity. When the temperature mounts above  $85^{\circ}$  F., if there are no drafts, we use fans to drive the  $90^{\circ}$  F. air from around the face and from next the body within the clothes.

It has been demonstrated that if two rooms be taken, each room warm and each occupied, one having fans and the other not, the room with the fans will show more  $\text{CO}_2$  in the breathing zone than will the other room. This is because the air which is ordinarily near the ceiling and is rich in  $\text{CO}_2$  is blown back down into the breathing zone. On the other hand, the room containing the fans will be the more comfortable because the currents blow the hot air of the aerial envelope away from the body. There is no comfort without air currents strong enough to change the air around the face freely and to blow out the clothes frequently. If the currents get lower than  $60^{\circ}$  F. something must be done to counteract.

The children in the Elizabeth McCormick Open Air School got heavy clothing and additional food and took active exercise. This is not the remedy for the average school room. There the remedy is to supply the currents heated to  $60^{\circ}$  F.

In hot weather no clothing is cool that does not permit the hot air of the aerial envelope to blow away. In cold weather there is no comfort unless the aerial envelope blows away, but the chilling of the body surface will be too rapid for comfort unless something is done to compensate. The things which can be done are to warm the blowing air or to take more exercise.

A second factor making for the comfort of air is humidity. A humid air chills more than a moderately dry air because the moisture of the air is a better conductor of heat than is the air itself. On the other hand, if the air is very dry, evaporation from the skin is excessive and the skin is unduly chilled if the temperature is low.

In cold weather, then, ventilation should be done with air which is fairly humid, yet not too humid. To get up or down decreases comfort.

In hot weather the body tries to cool itself by pouring out perspiration. The evaporation of this perspiration lowers the temperature of the surface from which it has evaporated. Therefore in hot weather dry air currents are much more comfortable than wet ones.

The comfort of currents is largely dependent upon the personal equation. Generally speaking, fat people want colder currents than lean people. Active people want them colder than sluggish people. Some people are naturally better heat makers than other people. They will be comfortable in colder currents than other people. Some people have trained themselves, so that their heat-making apparatus is well developed. They have educated them-

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selves away from close, heavy clothing, which held the foul hot moist air of the body in contact with it. They have educated their mechanism to the point where they feel better when this air is blown away and the heat lost is made up by greater heat production. And, finally, there are many psychologic factors. A draft crank is difficult to analyze. So much for comfort.

Many of the above comfort considerations merge quite logically into health considerations. In addition to the need of currents of air blowing around the body there is the still greater need of currents blowing around the head. The head, face and neck need the stimulus of having air strike their skin. They need that this air should be cool. They can stand this air cooler than can the body because they have been differently trained. The main consideration, however, is that air currents should blow the expired air away from the nose and out of the breathing zone. Should we not strive to get more currents rather than fewer, at the same time trying in cold weather to temper the temperature and humidity of the currents so as to properly safeguard the comfort of the occupants of the ventilated rooms?

Chicago has tried thoroughly in the schools that system of heating and ventilation which supplies pre-heated air to the rooms, the loss through walls and glass causing it to drop in temperature to about  $70^{\circ}$  by the time it reaches the pupil. New York has tried thoroughly in the schools the other system, in which heaters are placed in the rooms and the air for ventilation is introduced at little above the desired temperature. Both operate on the dilution principle; the principle well illustrated, perhaps, by a glass full of red ink. Try to remove the red ink by pouring in clear water. Many times the volume of ink must be displaced before the color is gone.

The ideal system seems possible of realization only by upward ventilation, in which the air, at the desired temperature, passes upward from the breathing plane to a suction outlet, and in which the heating is a separate consideration, so handled by very ample low temperature radiation carefully distributed that the local antagonistic currents of the cold surfaces are eliminated. This system has been to a certain extent found practicable in theaters. Its adoption in school rooms can follow only a change in the construction of these buildings, which will permit of the necessary distributing chambers under the floors, or perhaps of the necessary supply pipes in the desks.

Any percentage of humidity may be maintained by proper regulation of the temperature of the entering air and of the water used for spraying it. Double windows may be desirable for fuel economy and to prevent condensation on them in cold weather, due to the inside humidity. Easily operable cut-offs will be necessary in the supply

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and vent ducts to each room, so that when the windows are opened and the room flushed out, as is often desirable, and as a sense of cleanliness and decency seems to suggest, it can be done without, as at present, affecting the air delivery to other rooms. At best no artificial scheme of ventilation will ever, in all probability, equal outdoor conditions in promoting human health and happiness.

For the approximately normal children who make up the class commonly known as school children, ventilation reaching the following standards will be found satisfactory:

**Temperature:** The temperature of the occupied parts of the school room should not be allowed to go higher than  $65^{\circ}$  F. at any time when the heat is on. The heat of the room should be approximately uniform in all parts of the room. A temperature of  $60^{\circ}$  F. is better than  $65^{\circ}$  F.

**Humidity:** The relative humidity of the school room should be around  $60^{\circ}$ . Such a humidity will cause the window panes to frost in all very cold weather. It can be safely assumed that the air in any room in which there are thirty people, the room having single windows which do not frost when the outside temperature goes lower than  $20^{\circ}$  F., is too dry.

**CO<sub>2</sub> Content:** The CO<sub>2</sub> in school rooms should not rise above 6 or 7 per 100,000.

**Volume of Air:** The volume of air depends upon the principle employed in its introduction. 4,000 cubic feet per pupil per hour will be required if the foul air is perfectly admixed with the fresh air. 1,000 cubic feet per pupil per hour is enough if the fresh air is fairly well protected from admixture with the foul air. A figure in between these two figures will be required according as the two kinds of air are kept separate. It is not so much the volume of air as its method of introduction that counts. If the air is introduced hot, or even warm, say over  $110^{\circ}$  F., it should be introduced high up in order to prevent its blowing fresh from the inlet to the outlet. If the air is introduced cold, without any heating, it should either be introduced high up near the ceiling or else be introduced in a current directed upward so that the force will carry it well toward the ceiling, this in order that it may be warmed before it reaches the body. Under other circumstances it should be introduced low down.

In the language of the British Departmental Committee on Ventilation of Factories and Workshops, 1907:

"The quantity of air depends on the distribution; and in many cases a relatively small quantity well distributed is far more effective than a large quantity badly distributed."

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**Blowing Out of the Rooms:** During the recess periods the air in the room should be blown out by raising all the windows and opening all of the doors. This lowers the bacterial count of the air of the room about ninety-five per cent. It blows out contagion of all kinds. It freshens the air, makes it bracing. It should get back to about 50° F. by the time the students come in. They have been running and playing and they will warm the room to 60° F., in a very few minutes.

**Dust:** The dust should be kept down in the school room. This can be accomplished by good cleaning at night, say with a vacuum cleaner; by feet scrapers, to be used by the pupils before entering the room; and by keeping down the chalk dust. If the eraser is very slightly dampened before use, the blackboard dust will not be harmful. Wherever it is feasible the use of vacuum cleaning should be required by law.

**Light:** The school rooms should be long and narrow, in width not over twice the height of the top of the window from the floor. The light should so fall as to protect the eyes of the pupils.

**Apparatus:** The ventilating apparatus should be of such a type as to be readily adaptable to rapid changes in wind and weather.

The effect of lack of fresh air is especially brought out by the following extract from the May 14 (1910) Bulletin of the Chicago Department of Health:

"The continuation of the unseasonably low temperature has delayed the free opening of homes and as a consequence our pneumonia death rate continues high for this season. The deaths from pneumonia during the week just closed reached 137, 13 higher than in the preceding week and 23 in excess of the record of the corresponding week of last year. Those of our citizens who are keeping the windows of their living and working places open are in no danger—all others are."

The effect of the installation of reasonably efficient devices for insuring ventilation is shown by Prof. Winslow, of the Massachusetts Institute of Technology, in a paper on "The Cash Value of Factory Ventilation" in which he mentions that:

"Efficient production requires skilled and practical workers, in good physical condition, applying themselves with energy and enthusiasm to their tasks.

"Irregularity of attendance and the physical sluggishness and nervous inattention which accompany lowered vitality, mean direct money loss to the employer of labor, as well as a burden on the community at large."

As an example showing the results of improved ventilation, the paper calls attention to the operating room of the New England Telephone and Telegraph Company at Cambridge, Mass., a long room having a capacity of 30,000 cubic feet, extending from front to back of a business block. Fifty or sixty women are employed in this room as operators.

"During the warmer months no difficulty has ever been experienced in

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ventilating the room by means of large windows at each end, and by the use of electric fans. In the winter time, however, it was impossible to secure adequate natural ventilation without undue exposure to drafts. In the spring of 1907 a simple but efficient system of artificial ventilation was installed.

"A marked improvement in the comfort and general condition of the operators followed this change and the betterment was sufficiently marked to show itself notably in the greater regularity of work.

"Statistics collected and tabulated showed that prior to the installation of the ventilating system for the three winter months, January, February and March, inclusive, four-and-nine-tenths of the force were absent in 1906, and four-and-five-tenths per cent in 1907. With the ventilating system in use, the absences for the same months in 1908 fell to only one-and-nine-tenths per cent, a striking reduction."

And the following from a paper by Mr. William G. Snow:

"In certain buildings where the results of changing from poor to good ventilation have been carefully observed, a marked improvement in the general health of the occupants has been manifest. For example: The records of the United States Pension Bureau show that when the offices of the Department were located in scattered and poorly ventilated buildings 18,736 days were lost by employees through illness in one year, and about the same number for several successive years.

"When the Department became established in its new well-ventilated quarters, the loss was reduced to 10,114 days' absence on account of illness, the working force being larger and the work increased.

"The gain effected is not to be measured alone by the days' absence saved, but by the greater vitality and efficiency of the entire working force.

"In the Boston City Hospital good ventilation is said to have given reductions in death rate from 44 per cent to 13 per cent in surgical wards, and from 23 per cent to 6 per cent in other wards."

There are compulsory ventilation laws in a few states. They are not uniform and some of their provisions are impracticable. The moral effect of such laws, however, is excellent and great progress is being made. Only six states have ventilation laws for school buildings. Two, however, have state board of health regulations covering the same effect. Three have bills pending and in eight states the matter is being agitated.

Recognizing the harm which is being done by bad air, the American Society of Heating and Ventilating Engineers, the Chicago Public Schools and the Chicago Health Department have appointed a commission for study. This commission knows that much harm is done by pollution of the outside air, but this is beyond their province. Of the harm which is done by bad ventilation, part comes from lowering of the vital tone and part comes from air borne infections. Some part of the harm which comes from lowering of vital tone makes itself manifest in infections which otherwise would not have occurred. Lowering of the vital tone is shown in listlessness, sleepiness, mental heaviness and slowness, gaping, drowsiness, paleness, headache, anemia, laziness, enlarged glands, mouth breathing, snuffing, dis-

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position to catch cold. The air borne infections are pneumonia, colds, consumption, influenza, some of the scarlet fever, diphtheria and smallpox.

It is more important that the people should have tempered pure air than that they should have tempered pure water.

This commission is still at work. The method of procedure is to have members submit principles and methods of ventilation. By methods is meant basic methods. They do not consider devices or apparatus. When discussion has been as complete as is desired, and the members are ready for a conclusion, a proposition is put to a vote. So far fourteen basic principles have been unanimously agreed on. Others are still under discussion.

Those first discussed are basic principles of ventilation. In the main they are hygienic. Those now under discussion in the main are more concrete and relate more particularly to the mechanical side of the question.

The following are the principles upon which agreement has been reached:

1. Resolved, that carbon dioxide in the amount present in ordinary expired air does not settle out from a mixture of air and CO<sub>2</sub>.
2. Resolved, that carbon dioxide is not the agent of pollution of major importance in expired air.
3. Resolved, that a temperature of 68 degrees Fahrenheit with a proper relative humidity is the proper maximum temperature for rooms artificially heated and ventilated.
4. Resolved, that in the present state of knowledge it is impossible to designate the particular harmful agent or agents in, or associated with, expired air.
5. Resolved, that large quantities of CO<sub>2</sub>, more than 10 per cent, when long continued, are capable of producing some harm to the human body when inhaled, regardless of the source of the gas, provided the oxygen percentage is not greater than in ordinary air.
6. Resolved, that it is cheaper to heat and move air enough for adequate ventilation by currents than it is by dilution.
7. Resolved, that, neglecting humidity, the sum total of heating agencies in a room with stationary temperature is equal to radiation by the walls, ceilings, and floors, plus the heat lost with the outgoing air.
8. Resolved, that upward ventilating currents of air in crowded rooms are desirable when arising from sources free from dust or other injurious particles.
9. Resolved, that in those industries where considerable CO<sub>2</sub> is liberated in the process of manufacture, CO<sub>2</sub> is not a proper standard of air pollution.
10. Resolved, that the delivery of a certain volume of air per hour per inhabitant in a given space does not necessarily constitute ventilation.
11. Resolved, that in cold weather it is not possible to ventilate an occupied room in this climate except with air previously warmed.
12. Resolved, that heating and ventilating are separate questions and

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should always be so considered. When efforts are made to amalgamate them it should be borne in mind that there are parts of them that cannot be amalgamated and must be kept separate.

13. Resolved, that relative humidity is one of the most important factors in ventilation from the standpoint of health.

14. Resolved, that it is economic from a fuel standpoint to maintain a fairly constant relative humidity in ventilation.

### CHICAGO VENTILATION COMMISSION,

GEORGE MEHRING,

W. L. BRONAUGH,

S. R. LEWIS,

*Representing Illinois Chapter, American Society Heating and Ventilating Engineers.*

PROF. F. W. SHEPHERD,

*Representing Board of Education of Chicago.*

F. O. TONNEY, M. D.,

*Director of Laboratories.*

W. A. EVANS, M. D.

*Commissioner of Health, Representing Department of Health.*



## **Addenda**

**CHART SHOWING METHODS AND RESULTS OF OPEN AIR SCHOOLS IN EIGHT  
AMERICAN CITIES—BIBLIOGRAPHY OF OPEN AIR SCHOOL MOVEMENT—DI-  
RECTORS OF UNITED CHARITIES OF CHICAGO—OUTLINE OF ACTIVITIES OF  
UNITED CHARITIES OF CHICAGO.**

70 1880  
1880 1880



# Methods and Results of Open Air

| City                                           | Date of Opening | Months of Attendance | Where Conducted                                             | HOW MAINTAINED                       |                                                                                   |                                                           |
|------------------------------------------------|-----------------|----------------------|-------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------|
|                                                |                 |                      |                                                             | Teacher                              | Food and Clothing                                                                 | Transportation                                            |
| Providence, R. I.                              | January, 1908   | 10                   | Old brick school house. Open window room, heated by stoves. | School Committee.                    | School Committee and Providence League for Suppression of Tb.                     | Providence League for Suppression of Tb.                  |
| Boston, Mass.                                  | July, 1908      | 12                   | At first in tent, then moved to roof of park refectory.     | School Committee.                    | Ass'n for Relief and Control of Tb. first, Consumptives' Hospital of City, later. | Y. M. C. A. first, Consumptives' Hospital of City, later. |
| New York City.<br>(1) Ferry-boat "Southfield." | December, 1908  | 12                   | Old ferry-boat.                                             | Board of Education.                  | Food, Bellevue Hospital. Clothing, Woman's Auxiliary Bellevue Tb. Clinic.         | Woman's Auxiliary Bellevue Hospital Tb. Clinic.           |
| (2) Ferry-boat "Middletown."                   | August, 1908    | 12                   | Old ferry-boat.                                             | Board of Education.                  | Ladies' Aux. of City Health Department.                                           | Ladies' Aux. of City Health Department.                   |
| (3) Vanderbilt Day Camp.                       | May, 1909       | 12                   | Roof Vanderbilt Clinic.                                     | Board of Education.                  | Am. Nat. Red Cross & Vanderbilt Clinic                                            | Am. National Red Cross.                                   |
| (4) Ferry-boat "Westfield."                    | September, 1909 | 10                   | Old ferry-boat.                                             | Board of Education.                  | City through Bellevue Hospital.                                                   | None.                                                     |
| (5) Public School No. 21.                      | April, 1910     | 10                   | Class-room with pivoted windows and roof platform.          | Board of Education.                  | Food, Charity Organization Society. Clothing, City.                               | None.                                                     |
| Pittsburgh, Pa.                                | January, 1909   | 12                   | Balcony on Tb. League Hospital.                             | Dispensary Aid Society of Tb. League | Tb. League.                                                                       | Tb. League.                                               |
| Cambridge, Mass.                               | April, 1909     | 10                   | Old dwelling-house, remodeled.                              | School Committee.                    | Anti-Tb. Ass'n first. Now City.                                                   | Anti-Tb. Ass'n first. Now, City.                          |
| Chicago.<br>(1) Chicago Tb. Institute School.  | August, 1909    | 1                    | Tent on school grounds.                                     | Board of Education.                  | Tb. Institute.                                                                    | Tb. Institute.                                            |
| (2) Graham School.                             | September, 1909 | 10                   | Open window school room. No heat.                           | Board of Education.                  | None.                                                                             | None.                                                     |
| (3) Elizabeth McCormick Open Air School.       | October, 1909   | 10                   | Roof of day-nursery. Asbestos-board tent.                   | Board of Education.                  | United Charities of Chicago.                                                      | United Charities of Chicago.                              |
| (4) Chicago Tb. Institute Schools (3).         | July, 1910      | 1½                   | Tents on school grounds.                                    | Board of Education.                  | Chicago Public School Extension Committee.                                        | Chicago Public School Extension Comm.                     |
| Rochester, N. Y.                               | October, 1909   | 12                   | At first tent, then unused room in school house remodeled.  | Board of Education.                  | Food, Public Health Ass'n. Clothing, Needlework Guild.                            | Public Health Ass'n.                                      |
| Hartford, Conn.                                | January, 1910   | 10                   | Tent.                                                       | Board of Education.                  | Society for Prevention of Tuberculosis                                            | Society for Prevention of Tuberculosis                    |

\* This figure includes all expenditures for equipment. See page 59. Cost of food per day was

# Schools in Eight American Cities

| Home Supervision                                                            | Hours of Study | Hours of Rest | Feedings per Day | Av. Gain in Weight | Av. Cost per Day | No. of Attend-ants | No. of Teach-ers | No. of Pupils | Kind of Case Admitted                  |
|-----------------------------------------------------------------------------|----------------|---------------|------------------|--------------------|------------------|--------------------|------------------|---------------|----------------------------------------|
| Tb. Nurses of District Nursing Ass'n.                                       | 5              | 0             | 2                | 4                  | No report        | 0                  | 1                | 25            | Incipient and predisposed tuberculosis |
| Nurses of Ass'n for Relief and Control of Tb., first. School nurses, later. | 5              | 1             | 3                | No report          | 30 cents         | 2                  | 1                | 41            | Incipient and predisposed tuberculosis |
| District Nurses.                                                            | 2              | 2½-2½         | 4                | 6                  | 53 cents         | 7                  | 1                | 135           | Open tuberculosis                      |
| Tb. Clinic Nurses.                                                          | 1½-2½          | 1             | 3                | ½-lb. a week       | 23-41 cents      | 7                  | 2                | 71            | Open tuberculosis                      |
| Bd. of Health and Tb. Clinic Nurses.                                        | 4              | 2             | 3                | 1 lb. a week       | 41½ cents        | 3                  | 1                | 34            | Open tuberculosis                      |
| Tb. Clinic Nurses.                                                          | 3¾             | 1             | 3                | 1½-2               | 55 cents         | 3                  | 1                | 73            | Open tuberculosis                      |
| None, except by visits of teacher.                                          | 3¾             | 1½-2          | 3                | 2½-5               | 15 cents         | 1                  | 1                | 20            | Anæmic and debilitated children        |
| Tb. League Dispensary.                                                      | 4              | 2             | 3                | 5½                 | 45 cents         | 2                  | 1                | 12-15         | Incipient and predisposed tuberculosis |
| School Nurses.                                                              | 3¾             | 0             | 2                | 1.3                | 8 cents          | 1                  | 1                | 24            | Anæmic and debilitated children        |
| Nurses of Chicago Tuberculosis Institute.                                   | 2              | 2             | 5                | 3.8                | 48.7 cents       | 2                  | 2                | 30            | Incipient and predisposed tuberculosis |
| None.                                                                       | 5              | 0             | 0                | No record          | 0                | 0                  | 7                | 300           | Ordinary school children               |
| Nurses of Chicago Tuberculosis Institute.                                   | 3¾             | 1¼            | 3                | 3.6                | 64.6 cents*      | 4                  | 1                | 49            | Incipient and predisposed tuberculosis |
| Nurses of Chicago Tuberculosis Institute.                                   | 2              | 2             | 5                | 3.5                | 44 cents         | 9                  | 6                | 100           | Incipient and predisposed tuberculosis |
| Nurses of Public Health Ass'n.                                              | 1½ to 2½       | 1½            | 3                | 5.5                | 23 cents         | 1                  | 1                | 37            | Incipient and predisposed tuberculosis |
| Visiting Nurse Ass'n.                                                       | 5              | 1             | 3                | 5                  | 26 cents         | 20                 | 21               | 28            | Incipient and predisposed tuberculosis |

as 17 cents.



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## List of Officers of the United Charities of Chicago

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MRS. POTTER PALMER, *Second Vice President*  
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FRANK O. WETMORE, *Chairman Finance Committee*  
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# The United Charities of Chicago

a union of  
The Relief and Aid Society and  
The Bureau of Charities

## Outline of Activities

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                  |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>WORK FOR<br/>NEEDY FAMILIES<br/>THROUGH THESE<br/>DISTRICT OFFICES</b> | <ul style="list-style-type: none"> <li>Central—2729 Michigan Avenue</li> <li>Englewood—226 W. 63d Street</li> <li>Lower North—1116 Wells Street</li> <li>Northern—2537 Sheffield Avenue</li> <li>Northwestern—1551 Milwaukee Avenue</li> <li>South Chicago—9101 Commercial Avenue</li> <li>Southwestern—2123 S. Ashland Avenue</li> <li>Stock Yards—723 W. 47th Street</li> <li>West Side—940 W. Madison Street</li> <li>Mary Crane Nursery—818 Ewing Street</li> </ul> |                                                                                                                                                                  |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                  |
| <b>SPECIAL<br/>SOCIAL<br/>ACTIVITIES</b>                                  | <b>THE HOMELESS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Home for Men</li> <li>Employment</li> <li>Relief</li> </ul>                                                               |
|                                                                           | <b>Social Service Work at Cook County Hospital</b>                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                  |
|                                                                           | <b>MARY CRANE NURSERY with these departments</b>                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Dispensary</li> <li>Milk Depot</li> <li>Diet Kitchen</li> <li>Laundry</li> <li>Instruction to Mothers</li> </ul>          |
|                                                                           | <b>SUMMER OUTINGS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Camp (Algonquin)</li> <li>Outings</li> <li>Excursions</li> </ul>                                                          |
| <b>GENERAL<br/>SOCIAL<br/>ACTIVITIES</b>                                  | <b>INFANT WELFARE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Baby Tents</li> <li>Diets</li> <li>Classes for Mothers</li> <li>Home Instruction</li> <li>Visiting Housekeeper</li> </ul> |
|                                                                           | <b>OPEN AIR SCHOOL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                  |
|                                                                           | <ul style="list-style-type: none"> <li>Participation in State and National Charity Conferences</li> <li>Institutional Member American Red Cross</li> <li>Participates in Constructive Philanthropic Movements</li> </ul>                                                                                                                                                                                                                                                |                                                                                                                                                                  |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                  |
| <b>REGISTRATION</b>                                                       | <ul style="list-style-type: none"> <li>Application</li> <li>Registration</li> <li>Records</li> <li>Correspondence (outside reference)</li> </ul>                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                  |
| <b>INQUIRY DEPARTMENT</b>                                                 | <ul style="list-style-type: none"> <li>Reports on character and standing of charitable and benevolent enterprises</li> </ul>                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                  |
| <b>COMMITTEE ON PUBLICITY</b>                                             | <ul style="list-style-type: none"> <li>Reports</li> <li>Pamphlets</li> <li>Charts</li> </ul>                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                  |
| <b>FINANCE COMMITTEE</b>                                                  | <ul style="list-style-type: none"> <li>Appeals</li> <li>Funds</li> <li>Accounting—Auditing</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                  |









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